Q.370
Ta95su84

VERSITY OF
ILLINOIS LIBRARY
T URBANA-CHAMPAIGN
~~EDUCATION~~
C TY

title # 4355765

CENTRAL CIRCULATION BOOKSTACKS

The person charging this material is responsible for its renewal or its return to the library from which it was borrowed on or before the **Latest Date** stamped below. **You may be charged a minimum fee of $75.00 for each lost book.**

Theft, mutilation, and underlining of books are reasons for disciplinary action and may result in dismissal from the University.

TO RENEW CALL TELEPHONE CENTER, 333-8400

UNIVERSITY OF ILLINOIS LIBRARY AT URBANA-CHAMPAIGN

MAR 06 2001
OCT 02 1996
NOV 04 1996
OCT 08 [illegible]
APR 11 1997
NOV 15 1997
DEC 2 1999
SEP 16 1998
SEP 23 1999
NOV 19 2001
APR 2 [illegible]

When renewing by phone, write new due date below previous due date. L162

Digitized by the Internet Archive
in 2018 with funding from
University of Illinois Urbana-Champaign

https://archive.org/details/factorsthataffec00soum

D 42-217

FACTORS THAT AFFECT GIRLS' ACCESS TO AND RETENTION IN SCHOOL IN MALI: 1965-1992

BY

AMINATA MAIGA SOUMARE

Dip., Ecole Normale Supérieure, 1984
A. M., University of Illinois, 1989

THESIS

Submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy in Education
in the Graduate College of the
University of Illinois at Urbana-Champaign, 1995

Urbana, Illinois

Q. 370
Ta95su84

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

THE GRADUATE COLLEGE

NOVEMBER 1994

WE HEREBY RECOMMEND THAT THE THESIS BY

AMINATA MAIGA SOUMARE

ENTITLED FACTORS THAT AFFECT GIRLS' ACCESS TO AND RETENTION IN SCHOOL IN MALI: 1965-1992

BE ACCEPTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR

THE DEGREE OF DOCTOR OF PHILOSOPHY

Walter W. McMahon
Director of Thesis Research

Head of Department

Committee on Final Examination†

Walter W. McMahon
Chairperson

Steven E. Tozer

Fred L. Coombs

William T. Trent

† Required for doctor's degree but not for master's.

O-517

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

GRADUATE COLLEGE DEPARTMENTAL FORMAT APPROVAL

THIS IS TO CERTIFY THAT THE FORMAT AND QUALITY OF PRESENTATION OF THE THESIS

SUBMITTED BY AMINATA MAIGA SOUMARE AS ONE OF THE

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

ARE ACCEPTABLE TO THE COLLEGE OF EDUCATION.

Full Name of Department, Division or Unit

4/14/95

Date of Approval

Departmental Representative

© Copyright by Aminata Maïga Soumaré, 1995

FACTORS THAT AFFECT GIRLS' ACCESS TO AND RETENTION IN SCHOOL IN MALI: 1965-1992

Aminata Maïga Soumaré, Ph.D.
College of Education
University of Illinois at Urbana-Champaign, 1995
W. W. McMahon, Thesis Director
William T. Trent, Advisor

This research examines the factors that prevent girls from accessing and persisting in school on an equal basis with boys in Mali. It seeks to identify the most significant factors and those that can be affected by policy.

The working hypothesis of this study is that besides the commonly researched and known hindrances, inequities also result from poor political commitment, and inadequately designed and/or implemented policies. The key issues addressed are demands coming from the family, supply of places and resources from the government including educational policy factors, and school related factors affecting parents' demand decisions. The questions are how each of these factors impacts girls' schooling and which ones are more significant.

The study's significance lies in the fact that it is the only scientifically conducted effort to date, geared toward the analysis of girls' schooling in Mali. It is also unique in that, it is conducted at a time of reform when it can provide data that can help identify problem areas and guide decision makers in their new strategies towards enhancing girls' schooling. Furthermore, while the literature shows studies addressing one category of factors at a time, this study seeks to control for all of the major determinants so that each can be put in perspective.

The survey data collection included both direct interviews and questionnaire administration to stratified random samples. The Likert-type questionnaires also included open-ended questions. The total sample size is 724 participants. The data analysis included some descriptive statistics and multivariate analyses.

The key findings contradict the common belief that most parents in developing countries just refuse to depart from their religious, cultural and traditional values by educating girls. It rather appears that given a chance, most parents will send their daughters to school. Parents, however, live in areas without schools, or so far from school that they fear for the safety of their daughters. Furthermore, no form of government investment/assistance exists in some areas that could free girls up from home labor. In conclusion, parents need more information, opportunities, and incentives if girls are to attend and continue school.

DEDICATION

You have always been ready to pray for me whatever I was to brave. You always made me believe that there was nothing I could not achieve. Your love and your support are the ones that I have never questioned regardless of the circumstances. Without your persistence, determination, and support, I would neither go to nor finish school. This is for you, Aya and Baba.

ACKNOWLEDGMENTS

I would like to express all my gratitude to all my professors, and to my committee members in particular, for their guidance and patience. Each of them has, at some point or another, provided me with the crucial help without which going on would have been impossible. Please remember that I will remain more grateful than I can express, and please receive my modest but sincere "thank you".

I would like for all the people who have guided, helped, supported, and comforted me, to receive my profound expression of gratitude. Getting to this point has not been easy and comfort and assistance of various kinds are invaluable in the process. I did not want to name people but Dr. Robert Stake, thank you, you and your family, for everything. You have been a supportive and trusting professor and employer, a father, and a friend to me. I learned a lot from you, including modesty. I have no words to express my gratitude towards you and your family.

I would finally like to thank all my friends, and my colleagues, from this campus and from far away, for their support and kind words that always made me feel I could go on, I was doing well, and I could not fail to make it.

TABLE OF CONTENTS

CHAPTER PAGE

1 INTRODUCTION 1

What Happened to the Pledge for Universal Primary Education? 2
Objective of the Study 4
Significance of the Study 6
Guiding Theoretical Orientations of the Research 7
Definition of Terms 10

2 LITERATURE REVIEW 12
Patterns of Women's' Education 12
Benefits of Women's Education 16
Barriers to Girls' Access to and Retention in School 22
Demand Factors Constituting Barriers 23
The Educational Policy Variables 32
School Factors or Supply-2 Factors 37
How Does This Study Improve the Existing Literature? 39
Summary 40

3 THEORY OF THE PROBLEM 43
Parental Decisions 44
Household Demands Interacting With the Supply of Places 45
The Model and Measurement of Each Variable in the Data 46
Hypotheses to Be Tested 49

4 RESEARCH DESIGN AND DATA COLLECTION 51
Overview 51
Research Methodology 52
Research Design 54
Data Collection Procedure 62
Data Processing and Analysis 65
Descriptive Overview of the Samples in the Data 65
Strengths and Limitations of the Study 70

5 PRESENTATION AND INTERPRETATION OF FINDINGS 72
Hypothesis Testing 72
Household Factors and Demand for Girls' Enrollment 73
Decision Makers' View of Enrollment Demands 78
Supply Factors: The Supply of Places in Schools 82
School Supply Factors: (Qs2) Quality 89
Decision Makers' View Regarding Quality, and the Government's Will to Supply It 94
Important Issues Picked up During Data Collection 95
Summary 97

TABLE OF CONTENTS (CONTINUED)

CHAPTER PAGE

6 DEMAND, SUPPLY OF PLACES, AND SCHOOL QUALITY: RESULTS OF SIMULTANEOUS EQUATION ANALYSES 99
 The Logical Structure of the Decision Process 99
 Simultaneous Equation Estimates 101
 Girls' Enrollment 102
 Boys' Enrollment 108
 Girls' Retention in School 111
 Boys' Retention in School 113
 Policy Factors on Girls' and Boys' Enrollment and Dropping Out 114
 Summary 117

7 CONCLUSIONS AND RECOMMENDATIONS 118
 Overview of the Study 118
 Conclusions 120
 Recommendations 124

REFERENCES 128

APPENDIX
A PARENTS' SURVEY INSTRUMENT 133
B TEACHERS' SURVEY INSTRUMENT 140
C STUDENTS' SURVEY INSTRUMENT 145
D DECISION MAKERS' SURVEY INSTRUMENT 152

VITA 158

LIST OF TABLES

Table Page

1 Enrollment Figures by Gender at Various Levels and Access to Radio and Tv in Francophone Africa 14

2 Summary of the Stratified Random Samples 59

3 Measurement of Each Variable in the Data 60

4 Demographic Composition of the Samples in the Data 65

5 Impact of Household Factors on Parents' Decisions Overall 74

6 Effect of Household Factors on Parents' Decisions to Enroll Their Daughters in School 75

7 Impact of Household Factors on Urban Parents' Decisions 76

8 Impact of Household Factors on Rural Parents' Decisions 76

9 Effect of Household Factors on Girls' Dropping Out 80

10 Impact of Household Factors on Urban Girls' Dropping Out 81

11 Impact of Household Factors on Rural Girls' Dropping Out 82

12 Impact of Supply Factors on Girls' Overall Access to School 84

13 Effect of Supply Factors on Girls' Access in School 85

14 Effect of Supply Factors on Girls' Access in Rural Areas 85

15 Impact of Supply Factors /Governments' Decisions on Girls' Dropping Out in Rural Areas 86

16 Effect of Supply Factors on Girls' Retention 87

17 Impact of School Quality (Supply-2) Factors on Girls' schooling 90

18 Impact of School Factors on Parents' Decisions for Both Regions 91

[illegible]

[illegible] [illegible]

[illegible]

LIST OF TABLES (CONTINUED)

Table Page

19 Summary of The Effects of School Factors on Girls' Enrollment....92

20 Impact of School Factors on Urban Girls' Enrollment....92

21 Impact of School Factors on Rural Girls' Enrollment....93

22 Summary of The Effects of School Factors on Girls' Dropping Out....94

23 Determinants of Girls Enrollment....105

24 Determinants of Boys' Enrollment....110

25 Summary of Effects on Girls' Dropping Out....112

26 Determinants of Boys' Dropping Out....114

27 Summary of Effects of Policy on Girls' and Boys' Enrollment....115

28 Summary of Effects of Policy on Girls' and Boys' Dropping Out....116

LIST OF FIGURES

Figure Page

1 Parents educational distribution in the region of Sikasso 67

2 Parents educational distribution in the region of Mopti 67

3 Parents occupational distribution in the region of Sikasso 68

4 Parents occupational distribution in the region of Mopti 68

5 Proportions of parents' income distribution in Sikasso 69

6 Proportions of parents' income distribution in Mopti 69

CHAPTER 1

INTRODUCTION

Since September 1960, Mali has become independent from France and set out to provide schooling for all school aged children. Mali is a landlocked West African country. The country spreads on 1,240,000 square kilometers where one finds a very thinly spread population ($6/km^{2)}$. Indicators of social and economic welfare are very low in Mali. As of 1992, Mali's GNP per capita was $310 changing depending on the results of the rainy season.

Mali's population is about 9 million people, 75% of whom are rural. As of 1992, Mali's average population growth rate was 3.2%, the crude birth was rate 50 per thousand, and the crude death rate was 18 per thousand. By the same period, infant mortality was among the highest in the world, 130 per thousand, while life expectancy was 48 years, and total fertility rate was 7.1%. About 26% of the country's GDP is spent on education. Total enrollment data from 1991 indicate that only 25% of Mali's school aged children enrolled and only 19% of those were girls. (world Development Report, 1994)

The country features one of the lowest adult literacy rates in the world (15%). Primary enrollment rates are still less than 30% of the total relevant school age (28%) of which girls represent about 37%. In most of Mali, school places are limited if existent, resulting in overcrowded classrooms or lack of enrollment for many. The average teacher/student ration is 60 students per teacher. From 1960 when the country became independent, to 1992, total female enrollment in Mali never reached 20% of the eligible age group. In a country where female population is around 52%, only 14% enrolled in primary education in 1988, while 4% enrolled at the secondary level and .2% in higher education. The condition of schooling in Mali, and that of girls in particular, are a clear reflection of Mali's economic and

social situation. It appears understandable therefore, that Mali's children lack the opportunity to attend school but it remains to be proven that enough commitment was devoted to education as an issue, and its equitable distribution to eligible children.

What Happened to the Pledge for Universal Primary Education?

> The citizens of Africa see in education a means by which their aspirations may be met. They are willing to sacrifice for the attainment of this means for gaining social and economic development, and wish to provide for more and more of their people education suited to their desires. (Taylor, 1984, p. 23)

The above was declared by the conference of Ministers of Education of Independent African countries--including Mali--held in 1961 in Addis Ababa, to discuss education for and by Africans. Given the existing educational statistics of most African countries, however, the question arises as to whether the above statement is reflected in research and in policies regarding education in general, and female schooling in particular, in those countries.

In the last fifteen years, factors that constitute barriers to female access to education are receiving more attention from researchers in the field of education, from educational decision makers, and from foreign donors. Providing education for women is no longer justified on equalitarian grounds alone. It is an economic imperative for more productivity growth needed for efficient development. It is also evident from the accumulated evidence that when women receive low levels of education, rapid population growth hinders economic development and reinforces social inequity (World Bank, 1990, p. 12). Studying education and development, (Bowman & Anderson, 1988; Psacharopoulos, 1985; Woodhall, 1973) as well as the economics of education (Cohn, 1979; King, 1990; 1991; McMahon, 1982; Psacharopoulos, 1985), many scholars have empirically substantiated the positive

relationship between greater female education and economic, social, and individual progress.

In Mali, policy problems are more crucial than ever for after 33 years of political autonomy, little has changed in female access and retention in school. In 1989, and since, the Malian Government has expressed a great deal of interest in redressing its educational system with a keen attention to issues related to gender. A particular concern that has been made clear lately is to increase girls' participation in school. Mali is ranked only before Pakistan, despite the world-wide attention accorded to the issue of women's education. In 1965, 16% of school-age girls were enrolled at the primary level. In 1988, 23 years later, only 17% of school-age girls were enrolled at the same level while the country's population grew from four million to more than nine million within the same time frame. At the secondary level, there were respectively 2% and 4% of the relevant age group while higher education included only .2% of the relevant age group in 1988 (HDR, 1990).

The educational situation, especially that of girls, is also made more critical by the decreasing educational expenditures in most developing countries, which also affects per pupil expenditure, and contributes to the lower percentage of overall enrollments. In Mali, the per pupil expenditure which used to be 29.4% of the national recurrent budget in 1983, for instance, came down to 25.2% in 1987, (World Bank, 1989, p. 10) and no particular efforts or policies were in place to boost female school participation prior to 1989. Educational statistics show that in 1987 61% of students in first grade dropped out before reaching second grade (WDR, 1990, p. 204). Drop-out figures also show that girls usually drop out in larger numbers than boys. Such trends raise the question of whether girls in Mali will ever have the opportunity to enroll and graduate in numbers proportionate to boys' and to reach levels of education enabling them to effectively participate in the economic development of their country. Mali being one of the poorest in the world therefore,

it is objective to say that universal primary education is hard, if not impossible to reach. It is realistic, however, to expect a certain gender equity in education, which is achievable when the right policies are put in place.

Objective of the Study

While it is known to most that girls are under-represented in education as opposed to boys, it is not clear why such a phenomenon persists where there is free and supposedly compulsory education. The purpose of this study is first to contribute new additions to the body of knowledge being used to improve female school participation in developing countries. This was be done by identifying factors governing sustained participation by girls in education in Mali, including identifying which ones can be changed by policy. In that process, the researcher examines what impacts the decisions parents make regarding their daughters' schooling, as well as how such decisions affect Mali's efforts to promote equal quality education for all children. Such an influence will be looked for through various areas, notably school and school policies, government and educational policies in general, as well as the family itself, and the community at large.

Second, the study aims at increasing the awareness of all involved parties (decision makers, educational beneficiaries--students and their families--as well as policy implementers--teachers and administrators) of the significance of the issue for better development, and about some of the workable things that can be done now. The researcher considers this objective already achieved because of situations such as the following that occurred during data collection.

> I walked into a selected family and asked to see the mother and the father. A mother came to me and called on her younger sister--a ninth grade drop-out, as soon as she understood what I wanted. After my interview with the "mother of the house" because her husband was not there, I set an

appointment to discuss with the drop-out. When I came back the next day, I started my discussion with the young girl and was interrupted towards the end by a coughing like I never heard before. It was a 2-year-old boy. Just waking up, he was having the hardest time breathing. His mother took him and put him on her laps, massaging his chest. Every breath was accompanied by a painful cough and crying. He was sweating and visibly in pain. He had pneumonia. I asked what was wrong with him and his mother said "he has a cold". I asked: "did you take him to see a doctor?" "Yes," she said, "he was even held there, then they released us later." "Did you get any prescriptions?" "Yes, but I lost it" she said.

I cried because I knew this was not an ordinary cold and I see a child about to die due to ignorance. At that time a man walked in, saw me crying and said in peuhl "oh, no one cries for our babies." Through such a statement, I understood that whatever happens to him is God's will . I learned later that the man was the boy's maternal uncle. I then offered to take him to the hospital. We were admitted at the emergency--many people became angry that we were rushed in while they had been waiting, thinking it was an unjustified favor. I had to explain that this is a person I never saw before etc.

The doctor suggested hospitalizing the boy but the young girl said that she did everything at home and that it would be terrible if she had to stay in the hospital since the boy's mother is sick as well. I suggested to the doctor that I would buy the medication and help the girl read the directions. To be short, I paid about $100 equivalent for the medicine. I had to intervene when the nurse was giving the injections because he first mixed incompatible products, then after I complained he tried to use the same disposable needle twice. The boy went home and kept going back every day for treatment until

> he started getting better. I was receiving visits from his family members at the hotel, with his uncle requesting some literacy courses (learning A, B, C, D). On my last day I went to see them before leaving, I said to them: "please make sure this boy goes to school. If I had not gone to school I would not have guessed what was wrong, I would not be here doing research, I would not have been able to pay for the boy's prescription." "Yes," with a lot of prayers and thanking, "we will send him to school. School is really good, now we see its importance."

This was a little but awakening event for them and gave me the impression that they at least received some evidence of the importance of school, and that is the reason why it is believed by the researcher that the second objective has already been reached.

Significance of the Study

This study has two main implications:

1. The literature review shows that numerous studies are already available about the household, and social and economic factors that generally impact girls' schooling in developing countries. To some extent those studies address a situation relevant to Mali and many developing countries in that they describe patterns such as economic poverty, substantial foregone earnings costs, as well as school fees, that must be borne by parents, and slow social change that contribute to hindering girls' schooling. Bowman and Anderson (1980), also find that culture and religion of the family can be serious barriers to girls' schooling. Bowman and Anderson mainly used existing data to bring out aspects of female education in developing countries. Anderson (1988), in a later extensive literature review about factors affecting access, concluded that a number of factors constitute serious hindrances to access: religion, poverty, distance, race/ethnic background, gender, and family composition.

None of the above studies deals with empirical studies allowing them to control for other factors. Furthermore, there are no studies scientifically addressing the case of Mali. Thus, what is lacking in the available studies regarding girls' education in developing countries is a simultaneous consideration controlling for several competing factors seeking to determine the relative importance of each. This study is important for it seeks to fill that gap left by the existing ones on this topic.

2. In terms of policy, the newly gathered information constitutes a basis for new policies and actions destined to increase girls' access to and retention in school in Mali. At a time of major policy changes within the country, it is hoped that this study will play the unique role of providing decision makers with data not yet available from areas never explored and information about what the key policy variables are, and thus, help in the effort toward finding more effective alternatives.

Guiding Theoretical Orientations of the Research

Parents' decisions to invest (money, time, or other resources) in their children's education can be determined by many factors varying from family to non-family factors. It relies substantially upon the logic of household decision making where parents decide based on their choice between the parents' present and the child's future needs. According to Craig (1981), the educational effort [of parents] can always be considered as an investment given that there are long term benefits involved in either case. Hence, some parents choose to forego earnings (whatever their daughter's contribution is at home) and let her attend school instead of doing the household chores, while others sacrifice their daughters' opportunity to attend school, even when it is free, due to their need of the child's contribution to their own income and consumption, and in some cases due to their indifference to, their disbelief in, or their lack of information about the benefits of female schooling.

A crucial aspect here is that while there are some household aspects that can be changed by government and educational policies, there are also policy practices which impact parents decision making and that need to be identified. It is therefore an imperative to sort out factors affecting girls' schooling in Mali, in order to identify which factors relate to parents' education and affect their socioeconomic status which in turn determines their ability to support if not to pay for their daughter's studies. But also such factors must be separated from the existing government and school policies determining the supply of education and how places are to be distributed to children. The social, cultural, religious and educational background of parents' whose attitudes are to be changed by policy also affect the demands coming from families for education, and must be taken into account.

More specifically, the key factors that govern attendance are classified in three main categories. First, demand, which is often determined by economic, cultural, and other factors reflected in family individual characteristics. Lockheed (1990) states that it stems primarily from parental decisions based on the opportunity cost of schooling. Second, there is supply, which refers to both the availability and quality of school facilities, materials and teachers. Third, there is the quality of the learning process, or treatment, (also called supply-2 in this paper) which describes what children experience once they are in school (p. 110).

The main difference between the present study and Lockheed's (1990) is that this study focuses specifically on girls while the former deals with children in general. As presented below, the variables are grouped into first, demand factors (affecting the families' demand decision), then supply factors (through government resource supply and other educational policies), and through the learning process (school factors such as teachers' and administrators' attitudes, the school environment, the curriculum). This comprises a simultaneous equation system of

three equations which, when estimated jointly, control for all of the major factors affecting the decisions to invest in schooling of girls.

Family-Related Factors Affecting the Demand Decisions by Households

The family or household-related factors include: (a) Parents' economic resources or socioeconomic status determining parents' income/ability to pay tuition, fees (uniforms, books, tables etc.), and transportation for their children to school and back; (b) parents' tastes, including religious constraints and cultural restrictions, and their acceptance of school for girls, (c) the size of the foregone earnings which include the lost opportunity for parents' to receive help from their daughters as well as the additional expenses occasioned by school needs, (d) Parents' educational level, (e) Parents' expectations from daughters' schooling and their new skills, (f) the number of children in the household.

Supply Factors Affecting Decisions by Households

Government support and other policies include: (a) remission of tuition and fees--book fees, costs of uniforms and fees for other services if any, (b) availability of and distance to schools where they are needed the most, (c) availability of means of transportation for those far from school or availability of quality/safe roads for those who walk to school, (d) existence of specific efforts for improving girls' education, (e) the attitude of administrators and policy implementers toward girls' education, (f) existence of sanctions or rewards meant to punish or encourage parents toward girls schooling. Are those sanctions enforced?

School Factors Affecting Demand Decisions by Households

Those factors include the : (a) availability and proximity (distance) of school, (b) availability of female teachers, (c) quality and relevance of curriculum, and (d)

attitude of male teachers and peers toward girls. The above factors are illustrated in the model for which equations are presented and discussed in Chapter 3.

Beyond this introduction, the remainder of the study includes a literature review (Chapter 2) which explores some studies conducted about women's access to formal education and its benefits, the various barriers that have been identified as impediments to women's access to or continuation of school, and the relation of women's education to economic development. The review also pays keen attention to the key variables studied and the methodologies used in such studies. Chapter 3 follows with a discussion of the theoretical approaches that address the problem, and of a theory of the causes of the problem. Chapter 4 discusses the research methodology used to collect, analyze and interpret the data. The presentation and interpretation of the findings follow in Chapter 5 and 6. Chapter 7 summarizes the conclusions and the policy recommendations that can be useful to the Ministry of Education in Mali in the implementation of policies destined to increase girls' access and retention in school.

Definition of Terms

Household: In this particular context household expresses a group of people living in the same family under the responsibility of a father and mother or several (in cases of extended families living together) playing the role of heads of household.

Urban: Urban areas in this context are cities. There, one can find houses with electricity and running water. There also are many schools with levels one through nine. The particular ones dealt with in this study both house high schools as well.

Rural: Generally an area where there is one or no school. There usually are more village chiefs than administrative officers as in this context, and the existing school is usually from first to sixth grades. When students pass the sixth grade

exam, they either move to another area for continuation or they give up. In such areas there is no running water, no electricity.

Income: Most parents being farmers, household income in this context rather refers to the family's revenue from farm products they sell, money received from their children, or from other money generating activities (e.g., own business or self-employment). Since it is not saved and it is generated for direct consumption, many parents could not express their income in precise figures but they are certain it is not much.

Access: Access in this context means the availability of a school in area of location and the opportunity to enroll.

Retention: Retention in this study means being kept in school and making progress as opposed to dropping out.

CHAPTER 2

LITERATURE REVIEW

Patterns of Women's Education

> Education may well be the area where women have made the greatest gains in recent decades. Since education influences women's economic participation in earning power, and also the number of children they have and the health their children will have, progress here can be the harbinger of expanding opportunities in the future. Education develops the human potential. In the modern world it is seen as vital for a fully productive role in life for women as well as men. (Sivard, 1985, p. 18)

Some aspects of women's education in developing countries are, indeed, encouraging especially if their state of thirty years ago is compared to what it is today. Sivard's (1985) World Survey of Women shows a considerable development of education since World War II. Sivard shows that primary enrollments in the world have actually "quadrupled from 95 million in 1950 to a projected 309 million in 1985," and that "at all age levels relatively more girls are now able to attend school" (p. 18).

In many developing countries, such an increase was so dramatic some educational research suggests it is one of the leading causes of unemployment among higher education graduates in the less developed countries (Soumaré, 1989). Such a phenomenon may seem hard to believe at first for countries which have less than 20% of the relevant school age population in primary school. But in countries like Mali, the Government was the sole employer for over twenty three years and the public job market did not grow at the same rate as higher education was providing degree holders in various disciplines. In Mali particularly, it was also due

to failure to implement policies set by the 1962 reform calling for limiting the rates of access to secondary and higher education (Soumaré, 1989).

From 1950 to 1985 girls' enrollment at the primary level passed from 27.1 thousands to 216.8 thousands in developing countries. In developed countries, for the same period, girls' enrollments at the primary level went from 50.5 thousands to only 52.7 thousands. As far as Sub-Saharan Africa is concerned, for the same period and the same level, enrollments went from 1.2 thousands to 26.3 (Sivard, 1985, p. 38). In Mali there has been growth in women's education compared to the period before independence. In some developing countries, educational growth was favored by a serious political commitment often translated through enforcement of compulsory education rules, at least for a while. Tunisia is a case in point (Jones, 1980). It is therefore encouraging to see that citizens who were left out of the system are being given the opportunity to participate in education and then in the development of their countries more efficiently. Despite such a growth, however, the problem that persists in the developing world as well as in Africa, and in Mali, in particular, is that the picture is not so encouraging everywhere.

> Despite an unprecedented increase in overall enrollments, inequalities--often very wide--still exist between the sexes, between socio-professional categories, between regions, between urban and rural areas; sometimes, in fact, there is a noticeable increase, whether one takes as indicators access to education, achievement level, or the transition from one level to the next. (UNESCO, 1981, p. 5)

Some African countries, for instance Cameroun and Togo, have known a faster or higher growth in the female education, and have even reached Universal Primary Education (UPE). For most of those which did not reach their 1961 pledge, however, the picture may be bleaker than known. While larger numbers of children enroll every year, it should not be neglected that the world population also

grows at the same time and--at a high rate in most developing countries. No later than 1988, in Mali, where the female population is over four million, and represents 52-53% of the total population, only 14% of girls enrolled in primary education whereas 4% enrolled in the secondary and .2% enrolled in higher education (Human Development Report, 1990, p. 152). Table 1 below also presents a regional comparison between French speaking African countries indicating that as of 1988, Mali had the lowest gross primary school enrollment rates in the region and that girls' enrollment is much lower than boys'.

Table 1

Enrollment Figures by Gender at Various Levels and Access to Radio and Tv in Francophone Africa

Type	Highest/Country	Lowest/Country
Gross Primary	Male: 124%-Togo Female: 100% Cameroon	Male: 29%-Mali Female: 17% Mali
Gross Secondary	Male: 36%-Togo Female: 20% Cameroon	Male: 6%-Burundi Female: 2% Chad
Gross Tertiary	M ale: 12.3%-Congo Female: 2.8% Gabon	Male: .8%-Chad Female: .1% Chad
Radio/1000 people	237/Chad	14%/Burkina, Niger
TV/1000 people	54/Cote D'Ivoire	not available

Note. From Human development report, by UNDP, 1990, Table 13.

There are striking differences between male and female enrollments despite the government's pledge in 1961 to reach Universal primary Education (UPE) in twenty years. Not only has UPE not been achieved, but Mali lags behind most countries in the world as far as girls' education is concerned. Looking at studies conducted on specific developing countries and at the current efforts by the Malian

Government, several explanations exist to such differences, notably, the weakness of the country's economy limiting the development of infrastructure and the amount of resources that can be allocated to education; poverty preventing parents from bearing the costs of their children's education; parents' religious, cultural and traditional beliefs and habits that tend to hold girls inside the house; as well as policies destined to help all children access school by breaking the common barriers faced by many.

Naturally, researchers often look at the kinds of factors, supply or demand, that have the most influence on girls' schooling." Anderson (1988); Bowman and Anderson (1980); Lockheed (1990) all enumerate factors in a manner similar to the perspective taken by this study. As put by Lockheed, (1990),

> School participation is an interaction of supply, demand, and learning process. Supply refers to both the availability and quality of school facilities, materials and teachers. Demand, often determined by cultural, family and individual characteristics, stems from parental decisions based on the opportunity cost of schooling. Learning process, or treatment, describes what children experience once they are in school. (p. 110)

These three main groups of factors are all addressed in this study. The demand side will be explored through parents' attitudes and beliefs towards the schooling of their daughters, the role parents' religion plays, parents' ability to bear the costs, and their expectations of their daughters. The supply side will be explored under what the government makes for school in terms of material, teachers, classrooms, and other infrastructure and how those affect girls in any particular way. The quality of places (supply-2) or treatment side will be looked at through school's environment and how it fits girls, what impact the scarcity of female instructors has on girls, and whether male instructors are biased or not, vis-a-vis female students. These factors are sometimes hard to dissociate and they do intercorrelate. Lockheed (1990) for

instance, recognizes that disparities between subgroups are significantly affected by gender, poverty and religious/ethnic status. As she points out, these factors are themselves interrelated, which makes it difficult to disentangle their effects. The additional aspect this study looks at is the educational policy variables that affect each of the three components separately. These key factors are essentially the focus of the literature review which will first discuss the benefits of women's' education in order to delineate why greater female schooling is worthwhile.

Benefits of Women's Education

Benefits that result from women's education have been demonstrated in various ways. There are direct or monetary and indirect or non-monetary benefits to both women's and men's education. However, as more and more evidence is gathered, it is being realized that women's education can be even more beneficial than that of men, if all things are taken into consideration. "The rate of return to investing in women's education in developing countries is as high or higher, even as measured by income differences alone (without accounting for fertility and child health effects), as men's (World Bank discussion paper No. 95, 1990).

Earlier studies indicate that economists have often used the rate of return to measure people's contribution to development as a result of their education through earnings. Such a strategy however, is challenged by many others who argue that the rate of return alone is not an accurate way of measuring women's contribution to development because it does not reflect women's additional economic activities many of which can now be quantified in other ways. One such economist is Woodhall (1973) who discusses the importance of women's education in various respects. Woodhall argues that measuring women's economic productivity/increased benefits solely in terms of increased earnings is a poor measure of women's contribution. She adds:

> Obviously, any rate of return estimate which simply ignores the problem of non working women will produce an over-estimate of the direct returns to women's education. On the other hand, it is equally misleading to assume simply that non-working women have zero productivity. For time devoted to housework and the rearing of children does have some economic value, even if it is not rewarded by earnings and salaries. (p. 14)

Like other economists, Woodhall (1973) distinguishes both direct and indirect benefits to women's education. In terms of earnings, for instance, she points out that education has the effect of increasing the average earning of women throughout their working life. She also adds that whereas women's salaries decline during child-bearing and rearing years compared to those of men, highly educated women have the opportunity to return to a steadily rising earnings path which is not the case for women who leave school early. As to educated women's labor participation, Woodhall's evidence suggests that the more highly educated a woman is, the more likely she is to work, and in particular, to return to work after marriage or child-rearing. As she stated:

> In Britain, the USA, and other countries, evidence has shown that despite high husband incomes, the labor force participation of married women has been rising steadily because education also influences and reflects attitudes and tastes for market work....thus, a positive relationship between education and female labor force participation is to be expected on several grounds, and there is ample evidence from many countries of such a relationship. (p. 18)

Woodhall recognizes however, the limitations of a research effort aiming at showing the benefits of female education and recommends that several factors be controlled for, notably; age, race/ethnic group, presence of, and age of children, and other household income (e.g., husband's income). It can thus be suggested that more education increases a woman's willingness, chances and disposition to work,

it guarantees her access to more enjoyable jobs, and it brings her higher income as well as more chances to come back to work after maternity absences.

Female education has more than monetary benefits. It is widely demonstrated that educated parents, more particularly mothers, have a positive impact on their children's achievement. Woodhall (1973) found that children of such women are more likely to succeed at school. Additional benefits for society are seen through increased productivity of working women, increased labor force participation, better health, longer life, the "inter-generation" effect on children's education and subsequent occupational performance, higher standards of family, quality child-care, a lower birth rate, and possibly the fostering of family attitudes conducive to economic growth (p. 25). Though Woodhall's study is relatively old, similar evidence continues to be uncovered in research studies (McMahon, Psacharopoulos, the World Bank, USAID.)

Regarding the assessment of a contribution of education through other effects, Cochrane (1984) shares Woodhall's view. Cochrane believes it is important to address the role of education in women's well-being and its degree. She thinks such an attention is necessary because most of the research in this regard has focused on men in the past, and moreover on earnings, income, and employment given that men were seen as the breadwinners. Cochrane tries to address three main questions: What evidence is there that education can dramatically alter, for the better, the lives of women in developing countries; why it does, or whether the effects are just spurious; and how to increase the educational opportunities, educational achievement, and/or intellectual skills of women.

First, she believes that women's ability to control their lives--by using contraceptives for instance--and the increased knowledge they acquire are both signs of well-being. In addition, that increased knowledge, she thinks, opens up alternatives in employment and its rewards, and raises productivity. It also

increases the ability to avoid negative events and situations such as premature death, illness, poverty, and child death. Through data assembled from a variety of developing countries in Latin America and Asia, Cochrane also finds further evidence that more female education is negatively correlated to fertility, which is now demonstrated by several other studies in both developed and developing countries.

Second, Cochrane points out that a number of factors could interfere in the correlation between education and these effects such as the fact that more educated women live in more urban areas where mortality tends to be lower, beside the fact that more educated women tend to marry more educated men who also have high income. However, Cochrane reports findings from a previous study showing that of nine per thousand (9/1,000) reduction in child mortality, six per thousand (6/1.000) was found to be the effect of the mother's own education leaving only three per thousand (3/1,000) as the effect of the father's education.

Such findings help increase confidence that effects of mothers' education for children are not spurious even when those additional factors such as father's schooling and income are taken into account. Moreover, that women's education helps control population growth is widely documented. In 1990, the World Bank reiterated that reducing fertility rates is an important part of any development program, and that reduced fertility depends heavily on women's education. In a study conducted on fertility and child survival in Mexico, Le Vine (1987) found that education guarantees lower fertility and lower birth rate. Referring to the largest World Fertility Survey, Le Vine said:

> The major findings...are that the schooling of women is one of the most consistent predictors of reduced fertility and child mortality in most countries and that it acts more like a determinant of reproductive change than a proxy

> for the other socioeconomic variables with which it is frequently associated. (p. 21)

Le Vine (1987) further adds that in Sub-Saharan Africa and Bangladesh, fertility often rises with a few years of schooling and drops only at the complete primary or post-primary levels whereas in countries such as Great Britain and Denmark, a generally negative association of women's schooling with fertility is qualified by an upturn among women with post-secondary schooling (p. 22). Such a finding suggests that advanced education for women is what enhances additional benefits, especially for a developing country seeking to control population growth. Le Vine used various methods to collect the data in Mexico: survey, naturalistic observations, attitude survey, and ethnographic study, which were carried out between 1983 and 1985. The study--The Harvard Project on Women's Schooling and Fertility/Mortality--was aiming at identifying how women's education affects declining fertility and child mortality (p. 24).

Additionally, improved health for both women and their households is another benefit of female education. In both World Bank and other economic studies, it is agreed that women's education contributes to better health for not only the mother but the whole family. The World Bank (1987) states that people are both the ends and the means of development, and that although improved health, nutrition, and education are ends in themselves, healthy and educated human beings are also the principal means for achieving development (p. 63). The World Bank further reiterates the importance of schooling; "Education, in turn, enables people to understand health problems and to act in their prevention and cure. In general, the incidence of mortality is found to be lower among children of educated mothers" (p. 63), and urges Africa to make human development its priority; "The future development strategy calls for a new commitment to developing Africa's human resources." Le Vine believes that "in specific regard to health and survival,

a more educated mother might be more likely to provide a healthy diet, seek appropriate medical help, and follow medical advice in the treatment of her child."

In UNDP (1990) statistical data tables, this link between female education and life expectancy is striking. In 1987 for instance, data show that in Francophone Africa, Togo has the highest life expectancy at birth while Mali had the highest rate of infant mortality under 5 (years old). (HDR, 1990) The literature shows earlier that Togo is one of the few African countries which achieved UPE and that Mali had the lowest female enrollment rates in the region.

Having noticed that mortality reduction and life expectancy have not evolved as thought attainable from earlier studies, the World Bank conducted a study in order to identify the causes of such a slowdown. First the authors did a cross-national assessment of the socioeconomic determinants of mortality based on a large body of findings. Second, they used a theoretical model of the relationship between parental education and child health in order to describe how aggregate and individual data may give different estimates of the relationship. Third, they worked more on pointing out evidence of the relationship between parental education and child health. National and other substantial evidence were put together to highlight the importance of the effects of parental education on child health. Cochrane (1984) concludes that maternal education is closely related to child health whether measured by nutritional status or infant and child mortality, and that additional years of education for women contribute to reducing mortality rates, which shows once more how important it is to educate girls and women. All such statements emphasize the multi-level importance of schooling that should motivate governments in developing countries to consider greater educational investment in female schooling.

Barriers to Girls' Access to and Retention in School

A careful analysis of the literature shows that there exist barriers to girls' education generally falling into three main categories: Demand, Supply, and School quality factors. First, there are parents' level of education, their socioeconomic status--determining where they live and how high the opportunity cost is to them for sending their daughters to school, their religious and cultural/traditional attitudes toward their own and their children's education--especially that of their daughters who can expect to be married off at a very early age against their consent. All those factors influence parents' demand for schooling for their children. The religious and cultural aspect becomes even more significant if one counts the fact that it can also impact the supply side where decision makers themselves can be influenced by it.

Second, comes the barriers existing in the supply side. The country's economic ability reflected through its GNP per capita, influencing the level of educational expenditure by the government is a major factor. Given that education is mainly public, the amount of money and other resources provided for schooling in Mali, as in many African countries is determined by the country's GNP per capita. In Francophone Africa, as of 1987, Gabon had the highest GNP per capita: $2,700.00 while Chad had the lowest, $150.00, the regional average being $440.00, and Mali's $270.00 (HDR, 1990). Although that percentage was above the Francophone Africa average, (21.7%), the World Bank (1989) thinks the education sector is under-financed, given the size of the total national budget. In this category can be found policies regulating the distribution of the available resources, the programs to be developed, the expenditure per child, and the areas that are to be prioritized in the process. The kind of policies designed to address female schooling and efforts to enforce them also fall in this category.

Third, educational policies governing the process through which education is distributed in school, and the quality of the learning environment represent the second dimension of supply which is also called supply-2. The class size, the training of the teachers, access to textbooks, and teachers' attitudes toward female students, as well as the availability of female teachers, all fall in this category.

Demand Factors Constituting Barriers

Among the known economic barriers to education in general, and to girls' education in particular, the major one seems to be parents' socioeconomic status (SES) which heavily weighs on their ability to supply for their children things that can make their schooling more successful. Parents' economic ability to do without the labor of those children at home or in the fields, a factor also linked to the SES, is a second major channel through which their demand for education for their children is influenced (Anderson, 1988; Bowman & Anderson, 1980; Lockheed, 1990; Long, 1990). According to some researchers, household factors can be considered to have a stronger influence on girls schooling than other factors. Agreeing with that view is Long suggesting that efforts aiming at a greater female schooling may be in conflict with families view of girls' productive and reproductive roles (personal communication, November 11, 1991). Yet, some of the literature tends to give more weight to school related factors while others believe lack of specific political commitment to the issue could be the key factor (Smock, 1981).

Girls' enrollment in Mali has increased and decreased over the past years without ever reaching a rate proportionate to the female population, or matching that of boys. The economy has not seriously improved, meaning parents' incomes have not improved substantially either, but could there be additional reasons beside the economic situation of parents?

Religious and Cultural Barriers Affecting Parents' Decisions

Besides parents' socioeconomic status determining how much they can provide for their children or how free their daughters can be, studies suggest that religion, in particular Islam, constitutes a barrier in many instances.

> Tracing the effects of broad cultural patterns on women's access to education represents another important attempt to account for sex differences in education. Some scholars have argued that women's access to institutions like schools depends on the extent to which cultural and religious beliefs accord women a role in life outside the family. (Elliott & Kelly, 1980, p. S3)

The above suggests that regardless of their socioeconomic status, some parents may keep their daughters away from school based on their religious beliefs and or cultural practices. "An important barrier to female education can be the entire set of beliefs that define "female" as distinct from "male" in a given culture or subculture" Stromquist (1987, p. i). The early literature does not empirically demonstrate that parents' religion or culture is a proven barrier to the schooling of their daughters. It is known through many societies, however, that parents seem to conduct their own costs and benefit analyses--not merely in monetary terms--many ways prior to deciding whether a child, more particularly a daughter, can attend school or not. Bowman and Anderson (1980) make such points stronger by saying:

> Whether schooling of a daughter is deemed worthwhile will be influenced by perceptions (or expectations) of the effects of the schooling on jobs, on the acquisition of a "better" husband, on the quality of domestic life, on the daughter's personality development, and on the well-being of her children. (p. S14)

In Mali, as in many African and Moslem cultures, respect and for subordination to the husband are as demanded as respect and subordination to

parents, which suggests that parents' and husband's will can play against a woman's education and employment in certain cultural contexts. UNESCO/MEN (1981) pointed out that some government efforts to promote campaigns of female adult literacy failed because there was a very low participation--5%--due to two reasons: husbands' reluctance to let their wives participate in the program, and the lack of time for rural women who rather spend time on their household occupations (p. 40).

Much is said in the literature regarding how religion may hinder girl's education and even women's labor out of the house, but it may not necessarily be the kind of handicap many fear it is, given the appropriate policy approach. Jones (1980) shows that in a predominantly Islamic country (like Mali, Tunisia, and many others), religion can be a serious barrier to girls' education. Based on existing educational policies and their outcomes in school, Jones' discussion of Tunisia's case shows two sides of the issue. The claim that religion is a barrier is supported, on one hand, in that the head of state at that time encountered fierce resistance from religious groups in his attempt to have all girls educated. On the other hand, however, that belief is contradicted because despite the predominance of Islam in Tunisia, the strong commitment on the part of the government in place led to less inequity in education for a given period. As put by Jones:

> Compared to other Arabo-Muslim nations, the Tunisian government has taken an exceptionally strong stand in favor of women's rights. Despite the reticence or opposition of prominent jurists, President Habib Bourguiba promulgated a new Personal Status Code shortly after independence in 1956. (p. S107)

As a result of this high level commitment to female school Tunisia has known a steady growth in girls' enrollments for decades, while the gap between girls and boys kept shrinking considerably. In 1960-1961 for instance, at the primary level, the

total enrollments were 278,528 for boys and 130,230 for girls whereas in 1976-77 the rates were increasing on both sides leading to 581,276 for boys against 375,831 for girls. If we look at the annual growth rate for both, it turns out to be 13% for boys and 12.9% for girls 1960-61, whereas in 1975-76 it was respectively 1.9% and 3.5%. The point this raises is the extent to which policy makers are aware of the benefits of education and the necessity of similar efforts. Do they even consider women's education as an issue that they must be determined to design policies for, and that they can effectively address by guaranteeing the implementation of those policies.

The case of Tunisia discussed above, and that of Indonesia, are two examples of modern day success of Moslem countries as to how Islam may no longer be such a big hindrance to women's education. In Indonesia, as of 1985, 66% of women were literate out of a female population of 80,727 million and 51% of girls age 5-19 were enrolled in primary and secondary level schools. In Mali on the other hand, for the same year, only 11% were literate, and 14% of girls age 5-19 were enrolled in primary and secondary level schools out of a female population of 4,061 million (HDR, 1990).

Whether religion constitutes the barrier it used to be therefore, is not a question that can easily be answered today without further evidence. In reality, a growing number of Moslems now recognize that Islam does not prevent women from receiving education and from working to sustain their families. Hyde, (1989) for instance, points out that the predominantly Muslim African countries have had the highest enrollment rate (despite the predominance of Islam) (p. 21). As some other studies might reveal, financial resources could play an important role in the importance of religion/culture since those Arab countries are also more economically prosperous than the other parts of Africa. In spite of such hopeful signals, however, Islamic rules can unfortunately be transformed, misinterpreted, deformed and misused (Carroll, 1983). Carroll states:

> Despite Islam permitting men and women alike to acquire success, education, and honor, and despite Islam according women equal religious and spiritual rights with men, (although not quite fully equal earthly rights), the orthodox maintain that such equality is specifically applicable to each sex's own natural sphere. (p. 218)

Parents' level of schooling is also shown as a big determinant of girls school participation (Anderson, 1988). Parents' perceptions and expectations of girls' schooling seems to also be affected by the amount of schooling parents themselves have had. Based on the literature, there seems to be less or no demand where there is no supply. A large part of the literature suggests that children whose parents have been educated are usually those who enter and continue school. But it is also common for poor parents, for instance farmers, to live in remote areas where the government has not invested at all, therefore where there are no schools available. As to distance between the school and parents' place of residence, it does not need any more proof. Most of the studies on educational barriers, point out that proximity is a handicap and that it sometimes affects girls more than boys.

Lack of time (due to heavy work load) is also a household related factor that plays against girls' schooling. Culturally, a woman's time is primarily to be devoted to her family's needs. That practice has changed to an important extent in industrialized countries but very little in developing ones. Thus, time has also been demonstrated as an important variable in women's success in school relative to their traditional occupations in that they have little if any time left after household labor. McSweeney and Freedman (1980) on women's education in Burkina Faso analyzed time budgets which indicated that rural women for instance, have very little free time, and that even in a government sponsored project meant to help them save some time, the time saved was used for other household tasks instead. It should be mentioned that though women were not able to use the saved time for

learning, the study points out that more girls were able to go to school as a result. The areas of distance and availability of time are areas where supply and demand enter in play again. Clearly, if alternatives were available--if those women were helped in the domestic tasks by their husbands or other family members for instance--or if there were policies in place meant to alleviate their burden, they could have saved more time and used the saved time to learn skills that would benefit the whole family. However, since those domestic tasks are traditionally assigned to women, it has so far been difficult to change them. McSweeney and Freedman's study was about rural women in Burkina Faso (formerly Upper Volta) but it is deemed relevant here because Burkina is a country traditionally very similar to Mali.

Supply Side: Economic Barriers Affecting the Supply of Places and Quality of School

Mali's economy is known as one of the weakest in the world (World Bank, 1989). The country's GNP is still one of the lowest in the world while poor resource management is said to account for part of the educational problem. The World Bank for example, remarked that Mali suffers from weak managerial and planning capacities. The Ministry of National Education for instance employs at least 30% of the civil service and manages about 25% of the government's budget while it has less qualified manpower and less adequate equipment to use these resources efficiently (World Bank, 1989). Contrary to other Francophone African countries, a greater share of Mali's educational budget is said to go to secondary and higher levels, while the primary level, with at least 81% of enrollments, receives 35% of the budget (World Bank, 1989, pp. 10-11).

Such a resource diversion from primary education has long been seen as a problem especially for developing countries which planned to reach Universal

Primary Education (UPE) within 20 years after their independence. Most of those countries rather ended up having more secondary and tertiary growth than primary (Soumaré, 1989). It can be said therefore that the limited resources from which the educational system suffers are also compounded with poor management. As will be discussed below, the educational system also suffers from more inefficiency both at the budgetary and the classroom levels. As of now, no single study has more strongly denounced the inefficiency problem existing in Mali's educational system better than Hough's (1989) article centering on that particular subject. While putting a particular accent on girls' condition, Hough shows that only 40% of those who enroll in primary school progress to second grade (p. 80). In a thorough analysis of the educational situation in Mali Hough came up with interesting insights as to how inequity and inefficiency go hand in hand in this country. As he stated:

> The Republic of Mali..., has an educational system which is widely acknowledged, both by external observers and its own government, to have major inefficiencies and not to serve the country well....Major reforms are needed as a matter of urgency if the educational system is to be able to assist the country toward social and economic development. (p. 77)

Though inefficiency is not directly the focus of this study, it is a relevant aspect given that any problem affecting primary school enrollment in Mali is likely to affect girls' participation more than that of boys. The first cause of inefficiency, Hough points out, is low enrollment rates at the primary level. In Mali, whereas some schools experience low enrollments, others are overcrowded depending on the part of the country in which they are located. In addition, the overall enrollment rates are found to be among the world's lowest (The World Bank, 1989). This meaning that girls' enrollments are the lowest of the lowest. Moreover, there is inefficiency resulting from the inequity between the country's various regions in terms of resource allocations: money, school materials, and teachers. Plans in Mali

do not yet include specific objectives relative to income disparities. The 84% of total spending in the 1974-78 plan which were distributed geographically, were distributed very unevenly between regions" (ILO, 1982, pp. 45-6).

The second type of inefficiency is said to result from repetitions and drop-outs. As Hough put it:

> A second major cause of inefficiency is seen in the combined effects of pupils' having to repeat one or more years, and in some cases dropping out of schooling altogether. Of the 70,000-odd children who enroll in the first year of basic education, currently some 10,000 drop out each year for the first three years, after which the drop-outs are much fewer. About 20,000 will have to repeat the first year, and some 16,000 will have to repeat in each of the next two years. It is sure a most inefficient education system in which only about 40% of pupils are able to progress on to class 2 at the end of the first year. (p. 80)

What makes the above more interesting is that girls are not only those who enroll in lower numbers, but also those who are more likely to drop out in greater numbers, amplifying the gender inequity. One can naturally realize that in such circumstances, many gifted people miss the opportunity to achieve skills both they and their country would otherwise benefit from. Consequently, there is here an aspect of inefficiency resulting in inequity. In sum, Hough shows that the inefficiency with which the educational system is run also contributes to worsening the situation by creating and maintaining further inequity even in the labor force. McMahon's view on equity and efficiency is that there is a complementarity between the two in human resources and that development policy decisions in education should analyze factors regarding both in order for educational investments to be both more efficient and more equitable (1982).

Those two aspects of the economics of education--equity and efficiency--are of vital importance and even seem to have a two-way relationship as demonstrated by McMahon (1982). He defines a pareto move as an investment such that no one will be worse off while many will be better off. With a clear understanding that equity and equality are not the same, the first in its broadest sense, encompassing justice, equality, humanity, morality, and right (Alexander, 1982, p. 194); and the latter, "as a general standard," conveying..."measurability ... more specifically referring to division, partition, and redistribution."(Alexander, 1982, p. 195) this could be an approach to which many developing countries could turn.

Bowman and Anderson (1980) have reviewed the literature about women's participation in education in the Third World. Like many other efforts to explain gender differences in education, Bowman and Anderson explored their case through various perspectives among which was the question of whether there is more equal supply of education for women as economic development progresses in those countries where religion has been a hindrance. Interestingly enough, they found both confirming and disconfirming evidence. As quoted by Elliott and Kelley (1980), their finding is that: "while in some Islamic nations women's participation in education lags considerably behind that of women in societies which do not practice female seclusion, this pattern is not evident in all Muslim nations" (p. s4). As discussed above, what is learned here is that while religion is a problem in some cases, it cannot be assumed that it is so in all instances. As a result of Jones' (1980) findings, it can be said that in some cases, the better the economy gets, the more equitable the educational system gets, when accompanied by appropriate political commitment. However, in situations where there were no significant changes despite economic growth, strong policies may be the missing factor.

The Educational Policy Variables

Policy as such can be considered as a means to change or control people's behavior. Many studies now indicate that a country's educational policies can have an impact on educational outcomes more than the country's level of educational development (Bustillo, 1989, p. 13; Hyde, 1989, p. 26). Such a view is in fact supported by this study since the researcher's main point is that, despite the impact of family (household) and school (treatment) factors, strong commitment to female schooling is realistically, more easily achievable than quick economic prosperity. The following sections present a preliminary analysis of Mali's Educational policy implementation process since independence. The education literature seems to suggest that girls whose parents received some schooling, and therefore know the value of education, or girls from well to do families who can afford other means of labor instead of their children's, are generally those who succeed in entering and pursuing studies to higher levels. On the other hand, the few students from poor households who attend are likely to drop out early due to long distances away from school, work for the family and, as a result, limited amount of time to study, or simply lack of role models and motivators. Another interesting aspect regarding girls' education, however, is the policies that govern it and the ways in which those policies are implemented. Although findings from interviews with a sample of key policy makers will be presented later, it is deemed useful to conduct a preliminary review with particular attention to implementation.

Educational Policy and Implementation

Chapter 1 includes a description of what female educational policy has been in Mali. There was no female education policy as such but the stated educational policy addressed all school-age children, thus leaving the possibility of including

both boys and girls. The implementation, however, led to different results for boys and girls. Although there are more girls than boys, the proportion of boys enrolled in primary school every year is higher than that of girls.

In the policy literature, implementation is said by many to be the most important and often neglected part of the policy process. This would suggest that if policy makers seriously think of how the goals set by their policy were to be reached, they would not only help the policy implementing agents, but also guarantee more success to the policy and its beneficiaries.

As far as Mali's educational policy is concerned, this work will examine it through Mazmanian and Sabatier's (1981) policy implementation framework of analysis and, to a greater extent, through Coombs'(1980) views of compliance with, and attitude change through policy. It is hoped that such an analysis will show what the case is in Mali. This overview is also deemed important because it allows a comparison with what officials' perception of the situation is when the findings are discussed.

The Mazmanian and Sabatier Framework

The Mazmanian and Sabatier framework (1981) provides an explanation of compliance as regulated behavior of identified groups in the policy implementation process. Within that process policy enforcement as well as the perceived and actual impacts of the policy become the key focus of an analysis. The Mazmanian and Sabatier framework also depicts specific independent variables addressing the complexity of the policy implementation process. Moreover, their work can be said not to have focused solely on one type of policy, (for instance only federal level policy), making the framework applicable to more than one setting.

The main idea in the Mazmanian and Sabatier work is that there is a situation where government agencies (or other decision making authorities) aim at changing others' behavior (others standing for the target groups and the implementing

agencies). They define implementation as "the carrying out of a basic policy decision, usually made in a statute" (p. 5), and according to them, the policy decision not only identifies the problem and designates objectives to be achieved, but also structures the implementation process. In Mali's case, an initial problem for example was identified upon independence: there was no educated citizenry--without which there could be no development. Objectives were set then as well: the government set to reach Universal Primary Education (UPE) in 20 years (1961-1981). Such a policy suggests that all school age children, boys as well as girls, will attend school. Third, the policy decision also indicated one way of achieving the objective: "compulsory mass education." There is no indication, however, that the implementation process was structured and it is the researcher's contention that much of the problem lies here. As put by Mazmanian and Sabatier, the ultimate goal of implementation is to achieve the statutory objectives which can be affected by a number of socioeconomic, environmental/structural variables falling in three categories of independent variables. Coombs' categories of noncompliance

While Mazmanian and Sabatier argue the importance of certain variables in the implementation process, Coombs (1981), on the other hand, believes that in judging the success of a policy the degree of compliance/noncompliance of target groups with the policy is very important, for the policy is most of the time aiming at changing the behavior of that target group. Coombs distinguishes five categories of noncompliance, each of which can cause a given policy to fail in its implementation process: Communication-based noncompliance, Resource-based noncompliance, Policy-based noncompliance, Action-based noncompliance, and Authority-based noncompliance. Each of these types will be briefly summarized below before trying to relate Mali's case to this context. It should be specified that this explanation of types of noncompliance derives entirely from Coombs article, The Bases of Noncompliance with a Policy.

Communication-Based noncompliance. Such noncompliance can occur when there has been a poor communication between the target group and the administrators for instance. The target groups in that case do not receive an adequate message about the purpose and directives of the policy and consequently fail to do what is required for the policy's success. Coombs believes that a clear communication leading to less distortion of the essential will be helpful, although as a policy analyst he recognizes that ambiguity is sometimes necessary for implementing agents.

Resource-Based noncompliance. This is the second category of noncompliance which occurs when the target people understand perfectly well what the policy demands of them but lack the wherewithal to comply with it because, for instance, carrying out the dictates of the policy requires unavailable funds, talent, time, or energy. To remedy such a noncompliance, larger appropriation of funds may be needed, also training programs, and possibly policy revision if feasibility is not certain. A word of caution for policy researchers here is to find out the real causes of the noncompliance.

Policy-Based noncompliance. This noncompliance may occur because of the misgivings about the policy itself. It has two components: goal-based noncompliance in which the target individuals do not support the goals of the policy or at least rank them low in their list of priorities in the competition for resources. For remedy, this noncompliance is difficult to change in the short term because people's values are involved. The second component is the belief-based noncompliance which occurs not in disapproval of the goal of the policy in principle, but because of the lack of belief that the policy will lead to that goal through the chosen strategy. Appeal to new evidence or expertise that supports the policy maker's assumptions about the linkage between prescribed behavior and policy impact is needed.

Action-Based noncompliance. This fourth type of noncompliance arises due more to the onerous nature of the prescribed action than its consequences. A way policy makers can handle such a noncompliance can be what Coombs calls political power which can be exercised through sanctions--promises of rewards or threats .

Authority-Based noncompliance. This last category of noncompliance may result from a feeling that the authority that is prescribing the policy, or the authority's agent, is acting illegitimately or will reap undue benefits from the policy. More consensus upon the limits and locus of authority for different kinds of policy should help.

Though it appears that the Malian case reflects several of the above described characteristics, it cannot be decided at this point what types of non-compliance, if any occurred simply based on these descriptions. Has there been any noncompliance on the part of parents with government policies? what type of noncompliance occurred in Mali? These questions are answered in the conclusions chapters. The responses are based on the foregoing discussion linked to both the results of interviews conducted among the current decision makers and some parents from the various social classes in Mali and on the empirical significance of the various policy variables in the hypothesis tests in the model.

The literature review however, shows that like Tunisia for instance, Mali's policy regarding girls education was also meant to change parents' behavior given that they were the ones who decide upon sending their children to school, those who encourage them to study, and those who support them financially as well as morally.

As Hough (1989) put it with regards to low enrollments and drop-outs, "the causes are not hard to find. Many parents continue to be unwilling to send their children to school, with the consequence that the children may attend irregularly: for poor families the loss of a child's labor" (p. 80). Also, like Tunisia, Mali's goal

upon independence was to reach Universal Primary Education (UPE) in 20 years, (1961-1981), offering education to all school age children. However, unlike Tunisia, Mali did not succeed in changing many parents' behavior toward sending and/or helping keep their daughters in school. One of Hough's points is that if only the local community could be so persuaded, many more children could be admitted to primary schooling at virtually no cost. Is persuasion alone sufficient? As this study discusses in the findings chapter, lack of persuasion of parents exists, but lack of alternatives for parents who need their daughters' help at home is more prevalent.

School Factors or Supply-2 Factors

The Environment

Girls schooling is said to be affected by many factors inside the school and or in the classroom. Such factors vary from school policies to teacher behavior and the availability of female teachers. Though an area not very much researched in African schools so far, the few existing cases show that teachers' attitude towards girls in the classroom can be a determining factor in their retention in school. "Nonetheless the school environment posed special challenges to the girls in terms of their general adjustment, their relations with teachers and their relations with peers" (Brenner, 1993, p. 7) While some girls do as well as, if not better than boys in school, many remain quiet in class, rarely volunteer to participate or say nothing when called on by the instructor to participate (World Bank, 1994).

Lack of Female Teachers

The school environment is thought to be even less hospitable to girls when female teachers are not present. In the female schooling literature, the absence or scarcity of female teachers is also perceived as an important factor since a greater

presence of female teachers seems to have a positive impact. As stated by Bellew and King (1991) evidence in some countries suggests that increasing the number of female teachers will boost girls' enrollment (p. 15). There is an indication that schools lack female teachers because women who become teachers are more likely to be urban residents who are not interested in moving to a rural area:

> where living and working conditions are less desirable; where housing and medical facilities are inadequate; where good quality schools are lacking; where food and clothing supplies may be limited; where piped water, electricity and modern household technologies are absent; and where single women may find it difficult to find a desirable mate. (Bellew & King, 1991, p. 15)

Teachers' Attitudes

In some schools some teachers show open gender bias towards girls while male peers also play a role in the process. "It appears that while teachers' behavior plays some role in creating differential classroom climates for boys and girls, the students themselves play a major role." (Brenner, 1993, p. 3) A World Bank (1994) study conducted in Guinea also reveals similar findings, indicating that while some teachers address derogatory comments to girls or punish them in harsher ways (pulling hair for instance), boys in the classroom also seem to feel more comfortable than girls and go so far as giving them orders and yelling at them and calling them names.

Some practices in the schools hurt girls more than boys, based on the sole fact that they are female, even though they are less in number than boys. For instance, it is the policy in many West-African schools that girls be assigned classroom and yard cleaning on a daily basis. Girls get punished for failing to do such chores while boys do them solely as a punishment (World Bank, 1994). Biraima (1982) also came to

the conclusion that "all teachers, whether taken as a whole, or scrutinized by gender, length of teaching experience or subject area, held low opinions of their female students' behavior, academic performance, socio-personal characteristics, and career expectations" (294).

The Curriculum

Besides school policies negatively affecting girls, the curriculum also raises questions. Several studies indicate that the content of the curriculum, especially textbooks which contain gender bias and tend to reinforce the traditional gender stereotypes, plays against girls. Mirta (1987) showed that in Costa Rica for instance, both public and commercially distributed textbooks contained as much gender bias in 1985 as they did ten years earlier, in 1975. (Lockheed, 1991, p. 115) Such evidence may not prove that the existing gender stereotypes prevent girls from performing equally but it indicates that the female image is seen the same way by both public and private book designers, and it indicates that not much is being done to change such stereotypes, even after they have been brought to attention.

Whether school related problems and other factors affect girls' schooling more than boys' in Mali may depend on the setting and remains, in this case, to be proven.

How Does This Study Improve the Existing Literature?

The existing literature shows analyses and re-analyses of existing data, or reviews of existing writings trying to reach a more global picture from the western experience, or limited case studies which do not reflect a reliable picture. Most of the early writings discussing female schooling issues in the Third World, rather mark a beginning of interest in the issue. As a result, many of those writings were not based on empirical studies. Such writings were also mostly inspired by studies conducted on female schooling in developed countries which have allowed

comparisons between developed and underdeveloped nations, and also helped identify research topics, methods, and instruments appropriate for developing countries.

Most of the studies related to women's schooling were conducted as surveys, casual observations, ethnographic studies, or non systematic case studies and reviews of other studies. When quantitative data are collected, correlation and regression analyses are performed. As pointed out in the model in the following chapter, and presented in the literature review, what is lacking in the available studies regarding girls' education in developing countries is a simultaneous consideration controlling for most significant factors while seeking to determine the relative importance of each.

Summary

Despite the concerns and the variety between different countries, the main problem remains the same: lack of sufficient female participation in school as opposed to boys, due to hindrances stemming from social, economic and political problems. The reviewed studies show that demand factors such as forgone earnings, school fees/costs such as cost of uniform, price of school material etc., parents' religion constitute barriers that either prevent girls from enrolling or cause them to dropout of school earlier than boys. On the other hand, several studies also showed that it is a fact that the supply (building schools where they are needed) of schooling which affects girls' participation, is also hindered by other factors such as the country's economic capacity and its government's commitment to education; educational policies that do not stress female schooling as an area of priority or that are too ambitious to be successfully carried out. Third, the literature review also showed that supply-2 or in-school treatment factors are recognized by most as a problem for girls. The lack of textbooks for instance, the lack of female teachers and

of teachers trained to deal with problems related to female schooling, the existence of policies negatively affecting only girls, and low per pupil expenditure are all believed to affect girls to a greater extent than boys.

Researchers generally agree that these problems are all important although they may have varying points of view as to which factors have the most impact on girls' schooling. Such a disagreement is understandable since contexts are different and none of the studies takes all those factors together in a simultaneous analysis. Religion, Islam in particular, has been consistently found to be a hindrance to girls' education in some contexts but other writers have also indicated that there may more than Islam as a factor. Through strong political commitment and the availability of resources for instance, some predominantly Moslem countries like Tunisia succeeded in reducing the female-male participation gap, while countries like Bangladesh improve female participation through various types of incentives despite low GNP. It therefore remains to be demonstrated what factors play the most important role in the Malian context. where female schooling is the second lowest in the world. Empirical research is therefore needed and that is the purpose of this study to add to the scholarship by providing what is missing from the past studies in order to reach a more comprehensive picture. As put by Smock (1981):

> the absence of detailed empirical data linking dimensions of the traditional culture and social structure to individual families' attitudes and decisions regarding schooling and/or to government policy makes it difficult to establish causal connections between cultural characteristics and opportunities for schooling. (p. 89)

The above was a review of what the literature says regarding factors that affect female schooling in Mali as they do developing countries in general. What it all tells us is that it is a reality that several types of barriers including the limited economic resources, cultural as well as educational backgrounds, policy design and

implementation problems, and sometimes teachers bias in the classroom or in school keep girls out of school in developing countries. That is alarming, given that female education has been widely documented as an important agent in economic growth, poverty reduction, health improvement, population reduction, better home and resource management and more.

Despite those barriers however, the above also tells us that female education can be even more beneficial than men's if all types of benefits are taken into account, and that it is not impossible to foster a greater participation through strong policies when a government is seriously committed to the issue. Finally, while the above shows the importance of female education as evidenced by economists and other scholars, it also indicates that there are additional things to do in order to make that evidence even stronger.

CHAPTER 3

THEORY OF THE PROBLEM

This section discusses the theory of households'/parents' decision to send their daughters to school, in a developing country, under a system of free and compulsory education. Also discussed is what type of data needs to be collected and how those data are analyzed. The hypothesis testing which is discussed in the findings chapters involves a simultaneous test of several key variables controlling for major significant influences. This allows the disclosure of the relative importance of the impact of each key factor on the families' decision about the schooling of their daughters.

The results of this study center on an explanation of the unequal distribution of schooling between girls and boys, how parents' socioeconomic status, their religious, cultural, and educational backgrounds affect their decision when it comes to girls' schooling, and what role is played in the process by policy factors. Government and educational policies and their implementation are important given that schools are mostly public and supposedly free and compulsory. It would therefore be expected that the policies in place change parents' attitudes in this regard. Despite the so-called Universal Primary Education (UPE) efforts however, attendance at the first part of the primary level is very low. Only 5% of girls enrolled in 1989, for instance, will finish sixth grade (Ministry of National Education, 1992, p. 41) Moreover, the evidence shows that even new efforts to promote greater female education in Mali have not yet been successful because students' parents and rural populations have not been specifically targeted (Ministry of National Education, 1992, p. 42). Hence, this study tries to identify what kind of policies can achieve the needed attitude change and what alternatives parents are receptive to. Other alternative strategies used elsewhere--varying from creating day care centers in Colombia and China, to

providing scholarships and free uniforms for girls in Bangladesh--are available and have been tried in other developing countries with both success and failure (Bellew & King, 1991). It is therefore important to identify what works for whom, and where, depending on the situation. That cannot be known without reliable data.

In Mali, a strategy is being tried in some regions (Sikasso is one of them and part of this study) by USAID as part of an Education project aiming at improving girls school participation and school quality among others. This study includes questions about the USAID/Ministry of Education awareness campaign which came as part of the project. The region of Mopti where such a project is not implemented will be used as a control group to the extent that this is possible given that he USAID project is not far enough along for more results to be observed.

Parental Decisions

Parents' decision to invest (money, time, or other resources) in their children's' education can be influenced by many factors varying from family to non-family factors. In most cases such a decision is more problematic for poor parents and parents living in rural areas of many developing countries because those need their daughters' assistance and that of their children in general. It relies substantially upon the logic of household decisions where parents and children decide based on their choice between their present and future needs. In other words, parents must be willing to sacrifice their own current consumption to invest in their daughters' education and their child's and future. According to Craig (1981), this can always be considered as an investment given that there are long term benefits involved. The fact however, is that most poor parents do not see the situation with such an eye. Parents are more convinced of the necessity of the present needs that they know, and are less inclined to believe in future educational benefits.

Hence, this is how some parents choose to forego real in-kind earnings (i.e., their daughter's contribution at home) and encourage her to attend school instead of doing the household chores, while others sacrifice their daughters' opportunity to attend school, even when it is free. The reasons may vary depending on families but some really need their children's contribution in the care of young children at home and while in some cases, there may be lack of school places, lack of political assistance, indifference to, disbelief in, or lack of information about, the need for and importance of girls' schooling.

Household Demands Interacting With the Supply of Places

Theoretically, rural parents put off sending their children to school due to several household related factors as discussed in the literature review. An additional crucial aspect here is that it is imperative to consider not only the known family factors, but the existing government and school policies determining the education distribution process as well. There seems to be a strong interdependence between such demand and supply factors. Examining them together can help uncover meaningful aspects of the problem. Furthermore, the social, economic, cultural, religious and educational backgrounds of parents result in attitudes that, in some cases, are eventually expected to be changed by policy.

The key factors that govern the attendance of girls are classified in three main categories. These categories include first demand for schooling by households, which is determined by household expectations, household resources and educational background, as well as other cultural, religious, family and individual characteristics. Lockheed (1990) states that it stems from parental decisions based primarily on the opportunity cost of schooling. The second group of factors determines supply of places in the schools which, Lockheed says, is an ensemble of those factors that refer to both the availability and quality of school facilities,

materials and teachers. The third group of factors relates to the quality of the learning process, or treatment, (also called supply-2 in this study) is and describes what children experience once they are in school (Lockheed, 1990, p. 110). While these three categories in our model are fully consistent with Lockheed's, the two studies differ in that the present includes some variables that distinguish specifically what affects girls while the former deals with children in general.

As presented in more specific terms below, there is first the demand for schooling (factors directly related to the families and affecting their demand decision), then second the supply of places (through government policies and other educational policies governing the supply of places and also affecting families' demand decision), and third, the quality factors which relate to the learning process (school factors such as teachers and administrators), and expenditure per student that also affect girls' families' demand decision and girls' attendance.

The Model and Measurement of Each Variable in the Data

This theory of girls' educational participation is expressed in a specific model adapted to the situation in Mali consisting of: equation 1 demand, equation 2 supply of places (quantity) and equation 3 supply of quality/treatment, (a second dimension of each place as discussed below. Those three equations are supplemented by two definitional equations, equation 4 representing the equilibrium term and equation 5 showing the total supply. The measurement of each variable in the model in the survey data collected is also presented. The jointly dependent variables are girls' enrollment demand and their dropout rates. Factors determining families' demand decision can be considered as both independent and intervening variables for they affect girls' schooling and are affected by a number of factors. Government policies affecting the supply of school places (Qs1), and school factors affecting the quality and the distribution process of education (Qs_2) are the independent variables in this

study. It should be acknowledged that those independent variables are also determined by a whole set of other factors but are considered as exogenous variables in this study.

The Model

Household Related Factors Influencing the Parents' Decisions in the Demand for Girls' Education is presented in the following equation called equation 1.

$$Q_D = f_1(Ps=(C_T+C_F)-C_{FE}+Y^e+Y-R-C-S+E_P-N-D+P+\mu_1)$$

Where:
Q_D=Demand for girls' schooling as measured by enrollments and drop outs.
$Ps=(C_T+C_F)$ Price of Schooling in direct cost to parents
C_T=Tuition and/or fees collected by school per student
C_F=other fees (other school related expenses-transportation, uniforms etc.)
C_{FE}=Foregone earnings cost per student or what parents sacrifice in real terms specifically because girls go to school.
Y^e=Expected real earnings after graduation (expected by parents from daughter's schooling)
Y =Parents' income (farmers, civil servants, traders...)
R= Religion constraints as measured by responses to questions indicating parents believe schooling destroys their daughter's belief in God.
C= Cultural constraint measured by responses to questions asking whether parents would pull their daughters out of school for marriage.
S=Social/community attitude/reaction toward girls' education as measured by the male-female ratio in the enrollments in that community.
E_P=Parents' education (level reached in school).
N =Number of live children in the family
D=Distance from home to school (in either urban or rural areas)
P=Teen pregnancy measured by whether parents' decision is or has been influenced by fear of a daughter's getting pregnant.
N_u=Number of children under age of five to be cared for.
$\mu 1$=disturbance

Some of these demand factors (specifically related to the household) that affect girls' access to education have been tested in many other studies. Many of the original studies encountered are basically empirical studies. Others are reviews of other empirical studies conducted in schools or communities of various developing countries. Few, if any of these studies however, have carefully considered the

theoretical framework or the wider range of determinants the effort calls for, as does the present study. Some of the above factors may or may not be inter-correlated, but they all are household related factors which may influence parents' decisions to send their daughters to school.

Supply side 1: access to places through enrollment as facilitated by central government policies affecting inputs and other policies which also affect girls' demand for schooling.

$Q_{S1}=f_2 (E_v, + L_E + P_s = (C_t+C_F) + I_D +B +I +D -R +\mu 2)$

Where:
Q_{S1}=Supply of places by the government (enrollments).
$Ps=(C_t+C_F)$=Price of schooling to government per student.
  C_t=Tuition and /or fees paid by government per student
  C_F=other fees (other school related expenses-transportation, uniforms etc.)
I_D=Information dissemination as measured by yes or no to a question asking whether the government gives parents information about the benefits of girls' schooling.
E_v=The presence or absence of requirements for an evaluation of the local school as measured by a yes/no dummy variable.
LE=Existence of sanctions measured by written policy statements regarding enforcement of girls' schooling
B = measured by whether borrowing is an option made available to parents to help them comply
I=Infrastructure as measured by availability and quality of roads and means of transportation
D=Whether the government provided school closer to where eligible children live.
R= Religion and culture of the decision makers as measured by their attitude toward girls' schooling as determined by their religious beliefs and/or their cultural habits.
$\mu 2$=Disturbances

Supply side 2: quality of the education provided and its distribution. Those are measured by policies made at the school level and the implementation at the local level, of central government policies in the education distribution process.

$Q_{S2}=f_3 (F_T - T_A + P_I + E - R - X + \mu 3)$

Where:
Q_{S2}=Quality and aid to access as measured by per pupil expenditure:
F_T=Availability of female teachers in school.

T_A=teacher's attitude toward girls as measured by verbal or physical abuse.
P_I = Implementation of Educational policies addressing girls schooling as measured by strategies to be followed in the process.
E= enforcement of sanctions measured by reward or punishment for those who comply with female education policies or do not.
R= Religion and culture of the decision implementers as measured by their attitude toward girls' schooling determined by their religious beliefs and/or their cultural habits.
$\mu 3$=Disturbances

GS (Girl's participation)=Q_D+Q_S

Hypotheses to Be Tested

For the purpose of explaining what determines girls' access to school in Mali, three broad? hypotheses that are derived from the logic of the preceding model are selected for special attention in this study:

Hypothesis 1: Household related factors explain most of the variation in girls' enrollment rates in Mali.

Hypothesis 2: Government intervention on the supply side, including building schools in rural areas has the most significant impact on girls' schooling in Mali.

Hypothesis 3: In the distribution of education, policy implementers' (teachers and administrators) attitudes negatively impact girls' opportunities to access or remain in school.

It also is an imperative to respond to questions such as: which of the household related factors are most significant? Do the household-related variables affect girls' schooling more significantly than do the supply-1 and supply-2 factors taken together as measured by the total variation explained by the coefficients in equations 2 and 3.

Several questions remained unanswered making primary source data collection necessary. First of all, while it is clear that there is inequity between boys

and girls, it is not clear what factors more significantly affect girls' schooling. Additionally, while it is obvious that the Malian economy is weak, it is also obvious that when there is strong commitment equitable distribution of education between boys and girls seems to be a more realistic goal to reach than is balancing the whole economy of the country. Are Mali's policy makers ready and willing to embark on that path now that enough evidence is available on the importance of such an equity? If they are committed, how, specifically, are they planning to proceed?

Testing the above hypotheses within the logic of the model permits controlling for other effects on the parents' decisions, and sheds light on what could contribute to maintaining the most girls in school and what policy actions should be taken to reach such a goal. It will then be possible to pinpoint the key targets policy makers should aim at in order to improve girls' participation in education in Mali in general, an in Mali's rural areas in particular.

CHAPTER 4

RESEARCH DESIGN AND DATA COLLECTION

Overview

The overall hypothesis of this research is that considerable gender inequities developed in the Malian educational system over the past thirty years, and that the generally known impact of this on the country's poor economic growth has been worsened by the way policies are designed and/or implemented in the process.

Mali's economic constraints and the competing demands for scarce resources and the slackening demand for education make it unlikely that either the education sectoral share of the budget or the amounts involved (as a percentage of Mali's GDP) will increase significantly in the near future (World Bank, 1989, p. 10). This leads to the say that unless there is serious educational reform, girls' education enrollment has limited chances of ever matching that of boys. With the wide spread evidence that political commitment to this issue makes a significant difference, it can be assumed that more informed commitment can help reduce these inequities in education even though Mali's economy is weak and is likely to remain so for many years to come.

This study follows up on other much more limited studies such as the one conducted by MUCIA for the Malian government in the summer of 1990 and focusing on the Mali University Project. There are also other qualitative studies that are more descriptive but that do not show what factors are the most important ones or use the appropriate controls. It is deemed more helpful to the Ministry of education to have a study specifically designed to look at girls' access to school, and why they are likely to drop out if they enter at all, as opposed to boys. The present study comes at a time when the Malian Government and some international organizations such as the World Bank and USAID decided to do something concrete

regarding girls' school participation among other school-related programs in Mali. This study therefore, adds to plans of an ongoing educational project in the Republic of Mali. It is a five-year project called the Fourth Educational Project which started in 1990 and aims at achieving qualitative and quantitative development of basic education (primary schooling, grades 1-6) in some parts of the country. The determinants of girls' schooling is one of the concerns being addressed in the USAID project, and the collection of data was carried out with the USAID project's support.

Research Methodology

The survey instruments measuring each of the variables in the model are shown below in appendixes A through D. Those survey questionnaires were used with three independent samples, each from a separate population, consisting of: (a) decision implementors (school administrators and teachers), (b) parents, and (c) students. A detailed description of how each sample was selected follows below. The interviews with education decision makers and questionnaire administration were supplemented with some informal observation in families where interviews were conducted, and in a few classrooms as the study proceeded.

To provide a framework, first, school statistics covering 1988 through 1992 were obtained from the Bureau of Educational Statistics. Those data, supplemented with the World Bank and UNICEF educational records were explored in order to identify the trends over the last 25 years. The collaboration of the bureau of educational statistics and that of the various regional schools were very useful in this process.

Second, interviews were conducted among decision makers selected from various components of the Ministries of Education: the primary education administration, as well as representatives of people directly in charge of female schooling efforts "Division for Girls' Schooling," representatives of Students'

Parents' Association, and Religious Group Representatives. Such interviews were conducted both before administering questionnaires--as an exploratory investigation to identify more issues to address--and after the various questionnaires were administered, as a follow up to discuss concerns raised by parents, and potential policies. These direct interviews helped pinpoint what these decision makers believe to be the circumstances that constitute a disadvantageous situation for girls in education and what they see as possible solutions.

Third, a series of questionnaires were administered to a number of selected participants. The first questionnaire was administered to a sample of 301 parents. Rural parents represent 59% of this sample. Such an over-sampling was deemed important because Mali is a predominantly rural society and rural areas are generally more disadvantaged. The second questionnaire was administered to a sample of 277 school girls and boys from levels six to nine. In this case it was impossible to over sample rural students because their numbers were limited as opposed to urban students. With effort, 41% of the students turned out to be rural. For the student questionnaire, levels six to nine were targeted based on the assumption that pupils at those levels are capable of recalling what their experience was and of knowing what they feel about school. A third questionnaire was administered to 134 school teachers and school headmasters/principals. Here too more than 70% of the sample is urban due to the fact that there were fewer schools and fewer teachers in the rural areas. It was also intended to over sample female teachers but only 22% of the sample turned out to be female because they are a tiny minority in teachers' population. Most of the female instructors were in the urban schools.

Research Design

For the purpose of this study, the following variables are considered: Access and retention, the dependent variables, also interchanged with enrollment and dropout throughout this study, are expected to be affected by demand factors, supply factors (as relative to government supply), and supply-2 factors (as related to school treatment of boys and girls), the independent variables. The above is presented in the following equations which were discussed in more detail in chapter 3.

Demand for Girls' Education is presented in the following equation:

$$Q_D = f_1(Ps=(C_T+C_F)-C_{FE}+Y^e+Y-R-C-S+E_P-N-D+P+\mu_1)$$

Where:
Q_D=Demand for girls' schooling as measured by enrollments and drop outs.
$Ps=(C_T+C_F)$ Price of Schooling in direct cost to parents
C_T=Tuition and/or fees collected by school per student
C_F=other fees (other school related expenses-transportation, uniforms etc.)
C_{FE}=Foregone earnings cost per student or what parents sacrifice in real terms specifically
because girls go to school.
Y^e=Expected real earnings after graduation (expected by parents from daughter's schooling)
Y =Parents' income (farmers, civil servants, traders...)
R= Religion constraints as measured by responses to questions indicating parents believe schooling destroys their daughter's belief in God.
C= Cultural constraint measured by responses to questions asking whether parents would pull their daughters out of school for marriage.
S=Social/community attitude/reaction toward girls' education as measured by the male-female ratio in the enrollments in that community.
E_P=Parents' education (level reached in school).
N =Number of live children in the family
D=Distance from home to school (in either urban or rural areas)
P=Teen pregnancy measured by whether parents' decision is or has been influenced by fear of a daughter's getting pregnant.
N_u=Number of children under age of five to be cared for.
$\mu 1$=disturbance

Supply side 1: access to places through enrollment as facilitated by central government policies affecting inputs and other policies which also affect girls' demand for schooling.

Some of these demand factors (specifically related to the household) that affect girls' access to education have been tested in many other studies. Many of the original studies encountered are basically empirical studies. Others are reviews of other empirical studies conducted in schools or communities of various developing countries. Few, if any of these studies however, have carefully considered the theoretical framework or the wider range of determinants the effort calls for, as does the present study. Some of the above factors may or may not be inter-correlated, but they all are household related factors which may influence parents' decisions to send their daughters to school.

Supply side 1: access to places through enrollment as facilitated by central government policies affecting inputs and other policies which also affect girls' demand for schooling.

$QS1=f2\ (E_V, + L_E + P_s = (C_t+C_F) + I_D +B +I +D -R +\mu 2)$

Where:
$QS1$=Supply of places by the government (enrollments).
$Ps=(C_t+C_F)$=Price of schooling to government per student.
    C_t=Tuition and /or fees paid by government per student
    C_F=other fees (other school related expenses-transportation, uniforms etc.)
I_D=Information dissemination as measured by yes or no to a question asking whether the government gives parents information about the benefits of girls' schooling.
E_V=The presence or absence of requirements for an evaluation of the local school as measured by a yes/no dummy variable.
LE=Existence of sanctions measured by written policy statements regarding enforcement of girls' schooling
B = measured by whether borrowing is an option made available to parents to help them comply
I=Infrastructure as measured by availability and quality of roads and means of transportation
D=Whether the government provided school closer to where eligible children live.

R= Religion and culture of the decision makers as measured by their attitude toward girls' schooling as determined by their religious beliefs and/or their cultural habits.
$\mu2$=Disturbances

Supply side 2: quality of the education provided and its distribution. Those are measured by policies made at the school level and the implementation at the local level, of central government policies in the education distribution process.

$Q_{S2}=f3\ (F_T - T_A + P_I + E - R - X + \mu3)$

Where:
Q_{S2}=Quality and aid to access as measured by per pupil expenditure:
F_T=Availability of female teachers in school.
T_A=teacher's attitude toward girls as measured by verbal or physical abuse.
P_I = Implementation of Educational policies addressing girls schooling as measured by strategies to be followed in the process.
E= enforcement of sanctions measured by reward or punishment for those who comply with female education policies or do not.
R= Religion and culture of the decision implementers as measured by their attitude toward girls' schooling determined by their religious beliefs and/or their cultural habits.
$\mu3$=Disturbances

Pilot Studies

The survey questionnaires were pilot tested before the research proper started. A school was selected in the capital city for that purpose. Children from various levels of socioeconomic status as well as various ethnic and religious groups attend that school. Three main steps were followed in the pilot study (Babbie, 1990) to ensure quality: (a) a pilot-study sample was drawn among students and then the parents of those students were contacted. A sample of teachers including those whose students participated was also selected from the same school. In this particular case the testing took place at a location different from the research site. Consequently, there was no chance of using any subject more than once. As to decision makers, their questionnaire was tested with only one person since it was not complicated for their level of understanding, and there were only twelve of

them to interview. (b) The pilot survey was administered to those respondents; (c) the results were then analyzed and the findings interpreted.

As a result of this pilot study, the students' questionnaire was slightly improved. The decision was made to drop grade levels four and five out of the sample of pupils because the very young pupils were unable to understand even after the questions were translated into their local language. In the parents' questionnaire some questions were restated for better clarity. No modification was made to teachers' questionnaire. Several questions were found repetitive in decision makers' questions. Consequently, some questions were either combined with others or dropped after the pilot testing.

Sampling Procedure

Determining the Sample Size

To determine the sample size for this study, first, a minimum of 80 respondents was needed in order to be able to perform multiple regression, when there are up to ten variables under consideration. Second, expecting a realistic response rate of 60%, the sample size would then need to be: (80*10)/.6=1,333 for the parents' sample, 560 for the teachers and administrators' sample (with seven variables), and 560 for the students' sample (with seven variables). The resulting total sample size was 2,453 respondents. Such a sample however, was too large given both time and financial resources, as well as the size of the resulting data. The decision was made to reduce the scope of the data by selecting a smaller, more realistic sample instead. Thus, 724 participants were selected in all: 12 decision makers, 301 parents, 134 teachers, and 277 students.

Selecting participants. It was initially planned to use the following sampling procedure, using stratified random sampling. The sampling frame was first census books and then lists of present residents of a school attendance area. Given the way

houses are conceived in those particular areas (for instance houses are not in clear blocks, and more than one family live in a given household) sampling from clusters of households, as initially planned, turned out to be a problem. Alternatively, census books were obtained from the Mayor's office in Mopti. The number "5" was picked at random then every fifth set of parents was first selected from those census books. These were then grouped by occupation, and then a stratified random sample of 105 parents was selected from these occupation groups. Stratified sampling is said to be a method that guarantees a greater degree of representativeness thus decreasing the probable sampling error (Babbie, 1986, p. 85). When people died or moved, they were replaced either by the person living where they used to live or by the next name on the list.

In Sikasso, the second region in the study, the procedure was slightly different in that a list of the present residents of a school attendance area was constructed first before selecting a sample in a stratified manner. Teachers' sample, in both regions, included all those available in the selected schools. The students' sample is almost proportionate to that of parents although not all parents have children in the selected schools. Students were sampled after their parents have been selected but when the selected parents had no children in the selected schools, other students were selected at random with an effort to include more girls.

Site Selection

Given that the study is aiming to produce data that will help design new policies addressing girls' access to education, two regions have been chosen: one region where efforts are currently in progress, Sikasso, and another region where no such efforts exist, Mopti. Three key criteria guided the selection of sites within the two regions: first, the area's overall school population and its female proportion as opposed to other schools in the region; second the area's location away from the city; and finally, the accessibility of the selected area. Thus an area was selected which

was very close to the big city but had a poor female participation record while another area was selected which was far but from the city doing better than the first in terms of girls' participation.

Table 2

Summary of the Stratified Random Samples

Respondents	Decision Makers	Beneficiaries (from policies)	Policy Implementers
	12 Representatives from: Educational administration and finance, the APE, and Religious groups. (Male & female)	301 parents, stratified by occupation, and 277 students possibly related to selected parents and possibly going to school in the same community (Stratified by sex)	134 teachers of levels 1-9 and school administrators (Male and female) (Selected in total for each participating school)
Subtotals:	12	578	134
		Total: 724 + 63 people for pilot test	
Data Collection by:	Direct interviews	Interviews and Questionnaire	Questionnaire and observation

Instrumentation

The relationship of the key variables listed in the research design to girls' access to and retention in education was measured through a likert scale survey used among all participants. Decision makers' questions were open-ended. The following tables present the key factors, the definitions by which they are measured, how the data were collected about each, and the participants from whom data were collected. In the various tables, reference is made to Parents' Questionnaire in Mali, (PQM), Teachers' Questionnaire in Mali, (TQM), Students' Questionnaire in Mali,

(SQM) and Decision Makers' Interview (DMI) to indicate where the questions are located.

Table 3

Measurement of Each Variable in the Data

Definition of Variable	Demand Factors How measured
Q_D=Enrollment-Demand factors affecting girl's attendance	measured by the actual enrollments and dropouts of boys and girls per family
Y=Parents' income	measured by Parents' total earnings. TOTINC, PQM: Q#12
R =Religion of parents	measured by parents' religion. PQM: , Q#8
Y=Earnings parents expect daughters to make after graduation	measured by parents' decision based on daughter's future earning prospects PQM: Q#19
T_C= Traditional and cultural constraints	measured by whether Parents have or would take their daughter out of school to marry her off very young PQM: , Q#24, 26
S_R=Social or community attitude about girls who go to school	measured by whether parents have or would keep daughter home for fear of community perception PQM: Q#17
E_P =Education of parents	measured by parents' level of schooling PQM: Q#10
N=Number of children	measured by the # of children in the family PQM: Q#13
D=Distance from home to school	measured by whether the distance from school discourages parents from sending their daughters to school at all PQM: Q#29

(table continues)

Table 3 (continued)

Definition of Variable	How measured
C_{FE}=Foregone earnings	measured by what daughters could do/earn instead of going to school PQM: Q# 18
P=Teenage pregnancy	measured by whether dropping out is as a result of pregnancy PQM: PREGDRP, Q#14;
Supply factors (1) Places supplied by Government & educ. policies	Mali/Ministry of education
Qs1	measured by the availability of school/places MEN: Stats Doc
I_D=Information dissemination to parents by the government about the value of education	measured by the availability to parents, of information that influences their decision or behavior PQM: INFODIS,Q# 30-30b
P_I=Policy implementation	measured by whether the policy implementation has made girls' education a target to be reached and how. MEN, DMI Q#: 6-36 PQM Q# 31
L_E=Existence of sanctions	measured by parents' awareness of the existence of any sanctions MEN, PQM, Q#32
E=Enforcement of sanctions	measured by parents' having /willing to change attitudes as to the schooling of their daughters when facing sanctions PQM, Q# 31,
B=Borrowing	measured by whether parents would borrow money to pay for daughters' schooling PQM: BORO, Q# 21
I=Infrastructure (1)	measured by whether there have been new or improved roads and transportation recently INTERVIEW WITH PARENTS

Supply-2 Factors

QS2=Quality of what is supplied by school itself in the education process	measured by the school environment and its impact on girls' attendance as seen by parents.

(table continues)

Table 3 (continued)

Definition of Variable	How measured
Schqual=School quality of teaching	measured by whether parents believe in their daughters have anything to gain in attending school PQM: Q# 25
Tchrsex = Gender of instructor and parental preference	measured by whether parents prefer a female teacher for their daughters PQM: 27
C_F=Fees collected or provided by school	measured by whether the payment of fees is a reason why parents cannot send their daughters to school, PQM: Q#20
F_T=The availability of female teachers in schools	measured by the comparing the numbers of female and male teachers in selected schools

Data Collection Procedure

The data have been collected between November 1992 and March 1993. The researcher was assisted by four research assistants: one in the region of Mopti and three in the region of Sikasso. The research assistants were local teachers (as suggested by a USAID researcher who studied the area before) More parents have been reached in Sikasso than Mopti. More than 80% of the parents' questionnaires were administered in the form of interviews due to the fact that most parents are illiterate or have had very little schooling. That direct contact facilitated additional in-depth interviews among 30% of the participating parents. It also created a problem in that some of the interviews among parents were done by their children's instructor. As a result, such data were later discarded to avoid bias. Teachers filled out their own questionnaires after receiving guidelines from the researcher, while students were gathered in one room, or two depending on the case, and guided through their questionnaire. Contrary to initial plans, no

interview recording was possible among parents and decision makers because they felt more comfortable with note-taking instead. All participants were guaranteed total anonymity because contrary to the researcher's expectation, some people still need more assurance, not knowing what the implications of their cooperation might be.

The study calls for direct consultation in both rural and urban areas in each of these regions, with parents, students, and policy implementors. In the parents' case, the research was conducted at home, or at the work-place of the participant. Teachers were given instructions and left with the questionnaire. Most of the teachers filled out theirs and returned it the same day, but in some cases they needed to take it home and return it after completion. Parents were interviewed given their low levels of education although a few parents received instructions and were allowed to fill out the questionnaires on their own. Students, on the other hand, were put together in a classroom and directed through the questionnaire step by step. The research assistants were trained primarily by filling out a sample of each of the three types of questionnaires along with the main researcher who then explained the unclear points.

Procedure

The lack of sufficient information about Mali made it necessary to continue the literature research in Mali. The researcher suspected that some unpublished papers and other helpful written policy documents might be available inside that country.

In most instances, interviews and questionnaire-administration were conducted among the above listed populations in Mali as described above. But as pointed out by Quade, (1975) "In any study, the problem seldom remains as viewed at the start. Interplay between a growing understanding of what is involved and what might be involved in the future with what is known at the start forces a

constant redefinition." This data collection process has undergone some modifications when necessary, especially in the sampling process. It was also planned to tape all of decision makers' interviews but notes were taken instead because most of them were against the taping (only one of 12 did not mind).

The precoded survey questions are modeled to address educational access and retention, and the barriers from which girls suffer. Help was requested from two major sources. First, research assistants were hired and trained in how to administer questionnaires and record responses. The discussions with decision makers, religious group representatives, women's representatives, and most parents were direct interviews conducted by the researcher herself. It was initially planned to tape these administrators' interviews but notes were taken during the interviews/discussions since most of them would not be taped. Second, administrative authorities of the various locations helped reach respondents and also collected some of the distributed questionnaires when this help was needed. Once the questionnaires were collected, there was a systematic check by the main researcher in order to guarantee understanding Those who responded late were advised to turn their forms in to the school director and the authority was requested to help in this respect by sending those forms to the researcher where indicated.

There was a cover letter essentially explaining the purpose of the study to all respondents and assuring them, especially the rural ones, that this study had no political implications for them, and that they should be free to express themselves. Participants' total anonymity was also guaranteed.

Due to the poorly developed mail system that exists in Mali, no mail questionnaires were sent. It was rather interviews house to house, office to office and school to school. Such an endeavor was exhausting and time- and resource-consuming, but it did guarantee greater success. The response rate was more than 90% among all categories of participants.

Data Processing and Analysis

The purpose of the data analysis is to find out how much, when (the grade and age at which), and where (the areas of the country, the kinds of families) key factors hinder girls' schooling. It is necessary to look for the existence of correlations, and then try to determine what factors play a more important role in the process. The questionnaire data were analyzed at the University of Illinois, using SAS (Statistical Analysis System) and graphs were made using Cricket Graph. Both descriptive and inferential statistical analyses were performed (Frequency distributions, correlation, and multiple regression). Following, in the next section is a description of the samples and the data.

Descriptive Overview of the Samples in the Data

Table 4

Demographic Composition of the Samples in the Data

	Regions		
Participants	Sikasso	Mopti	Total
Parents	196 (152)	105 (25)	301
Teachers	72 (10)	62 (25)	134
Students	130 (40)	147 (73)	277
Decision makers	1	1	12[a]
Total			724

[a] All decision makers were selected from the Ministry of Education in the capital city, Bamako. Number in parentheses indicates the number of participants that are rural.

In Table 4 is presented the demographic composition of the various samples involved in the data collection. More parents were contacted in Sikasso than in Mopti. Contrary to the initial plan however, fewer mothers were included in the sample mainly due to rural mothers' unavailability. While teachers' samples were almost the same across regions they also included more male instructors than female instructors because, in this case, there were fewer female teachers. Students' samples were nearly identical throughout the two regions and included more girls than boys as it was possible to over-sample one group or the other although girls represented less than 50% of the student population.

As presented in Figures 1 through 6 below, parents are generally illiterate, poor, mostly farmers, and with very low income if any. The furthest most parents have been into school, if at all, is sixth grade. More than half of parents are farmers, fishermen, or housewives, and more than one half of parents generally earn less than US $100 per year. More detailed information is presented in the following graphs.

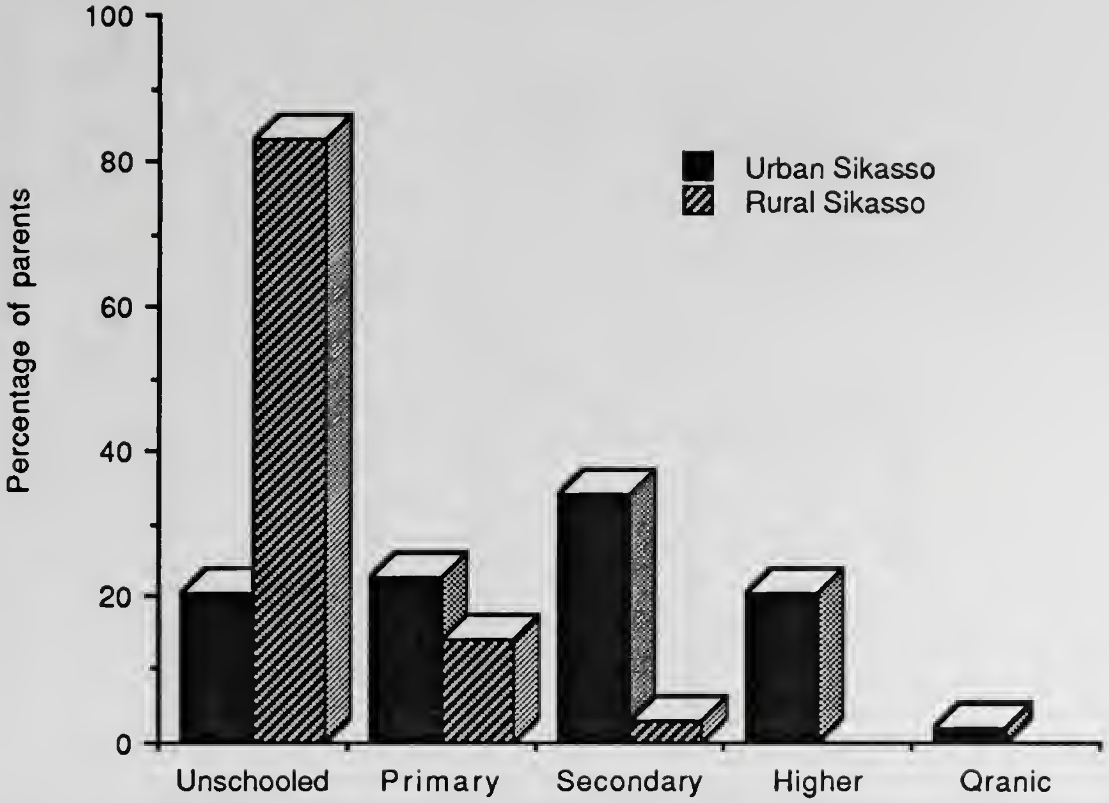

Figure 1. Parents educational distribution in the region of Sikasso.

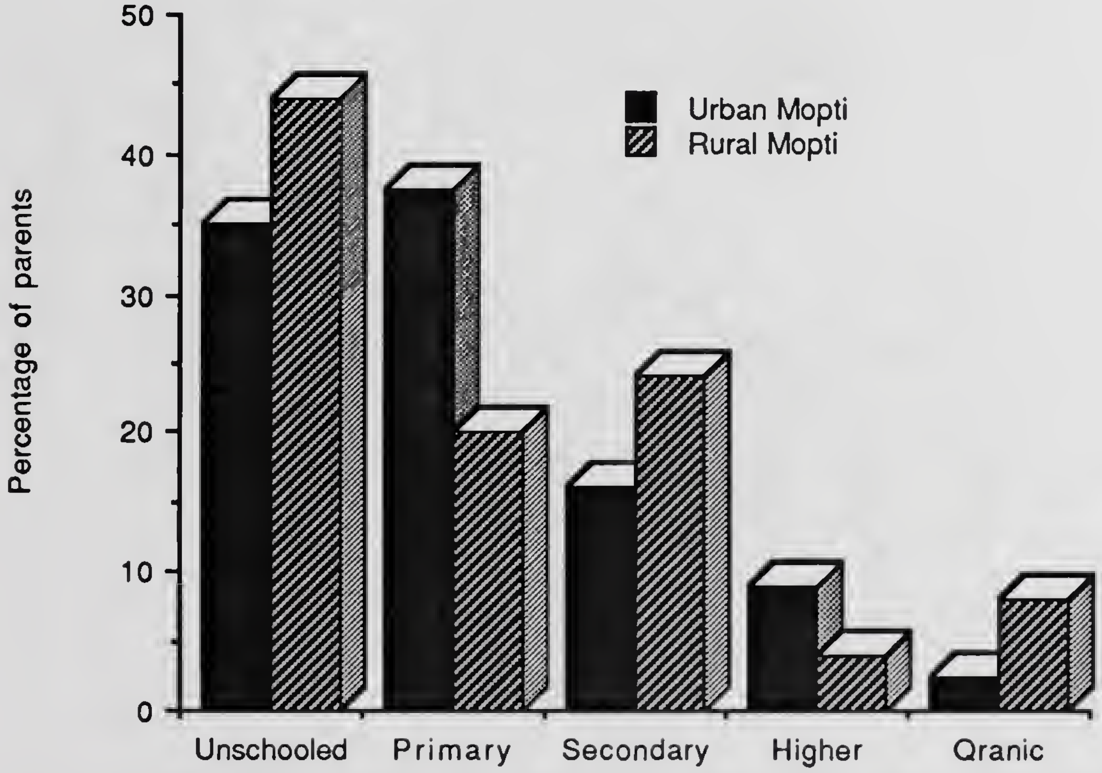

Figure 2. Parents educational distribution in the region of Mopti.

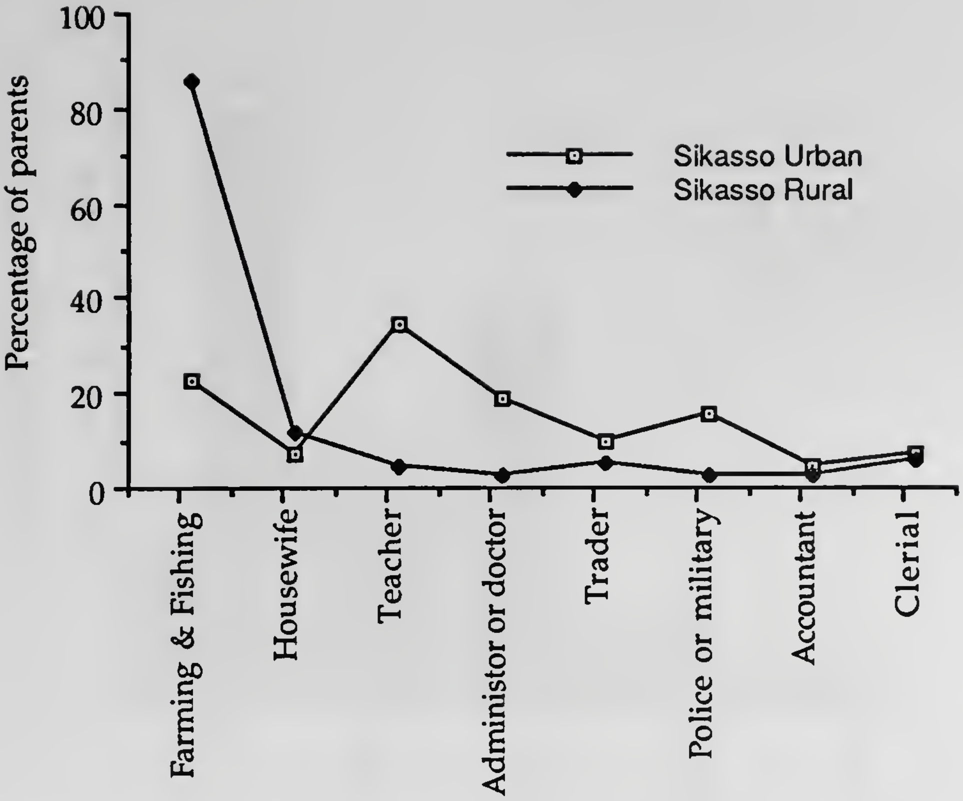

Figure 3. Parents occupational distribution in the region of Sikasso.

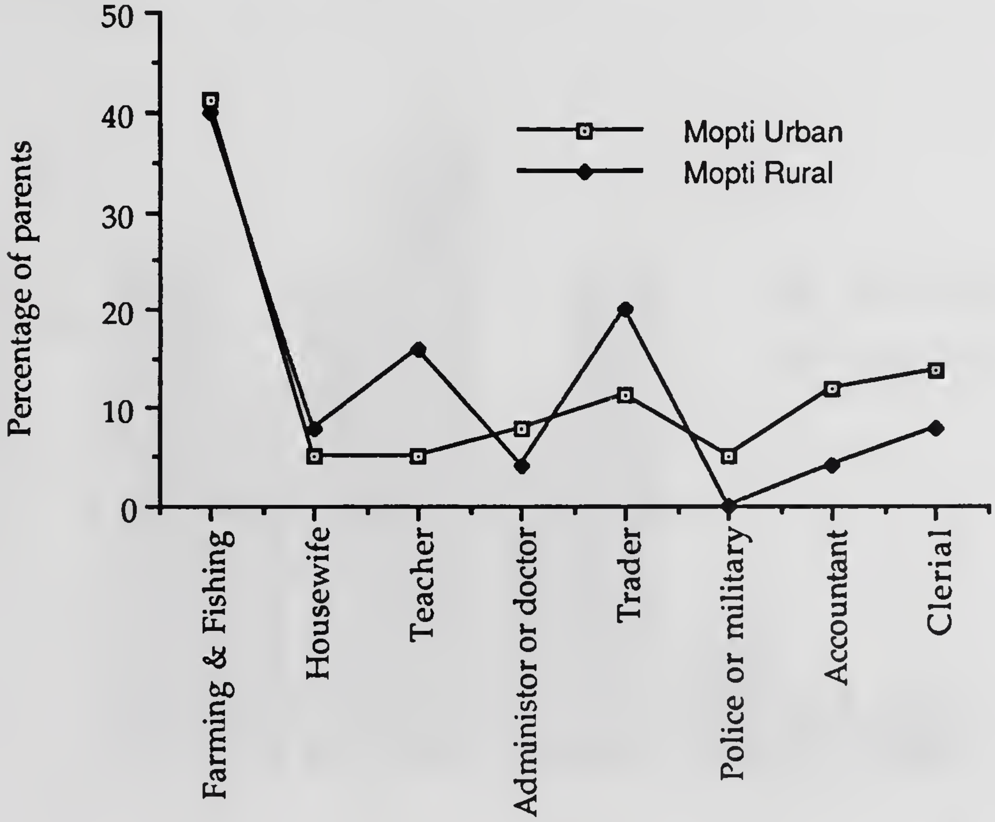

Figure 4. Parents occupational distribution in the region of Mopti.

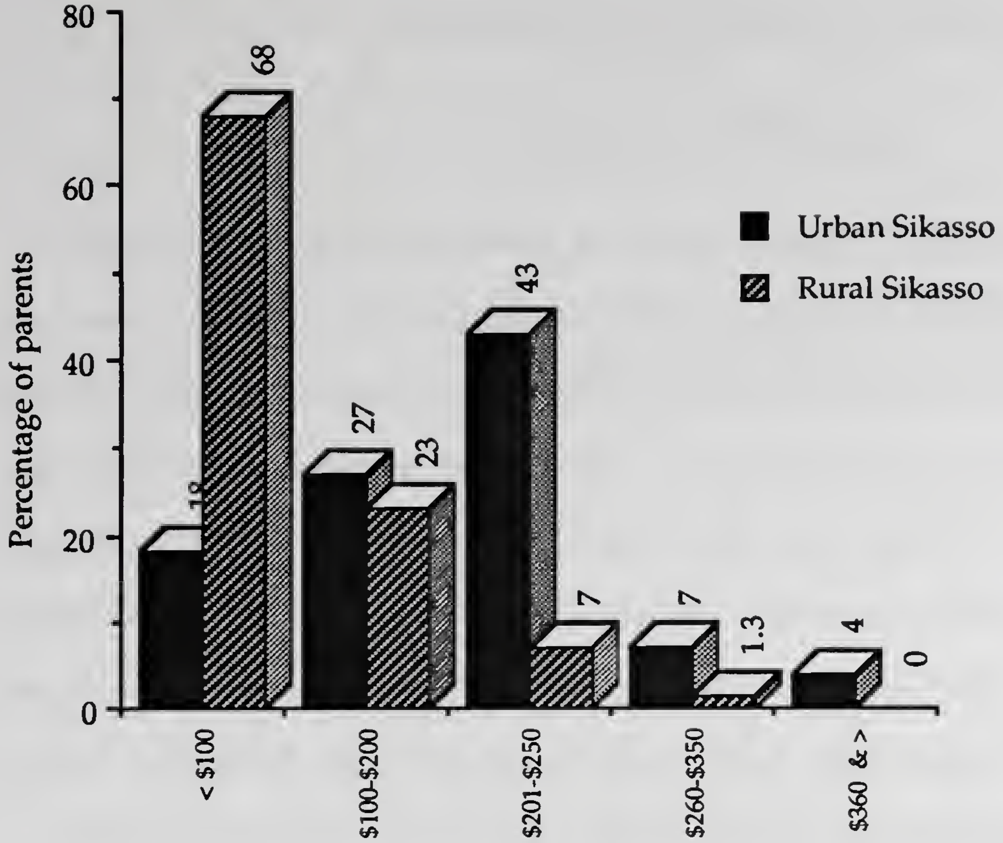

Figure 5. Proportions of parents' income distribution in Sikasso.

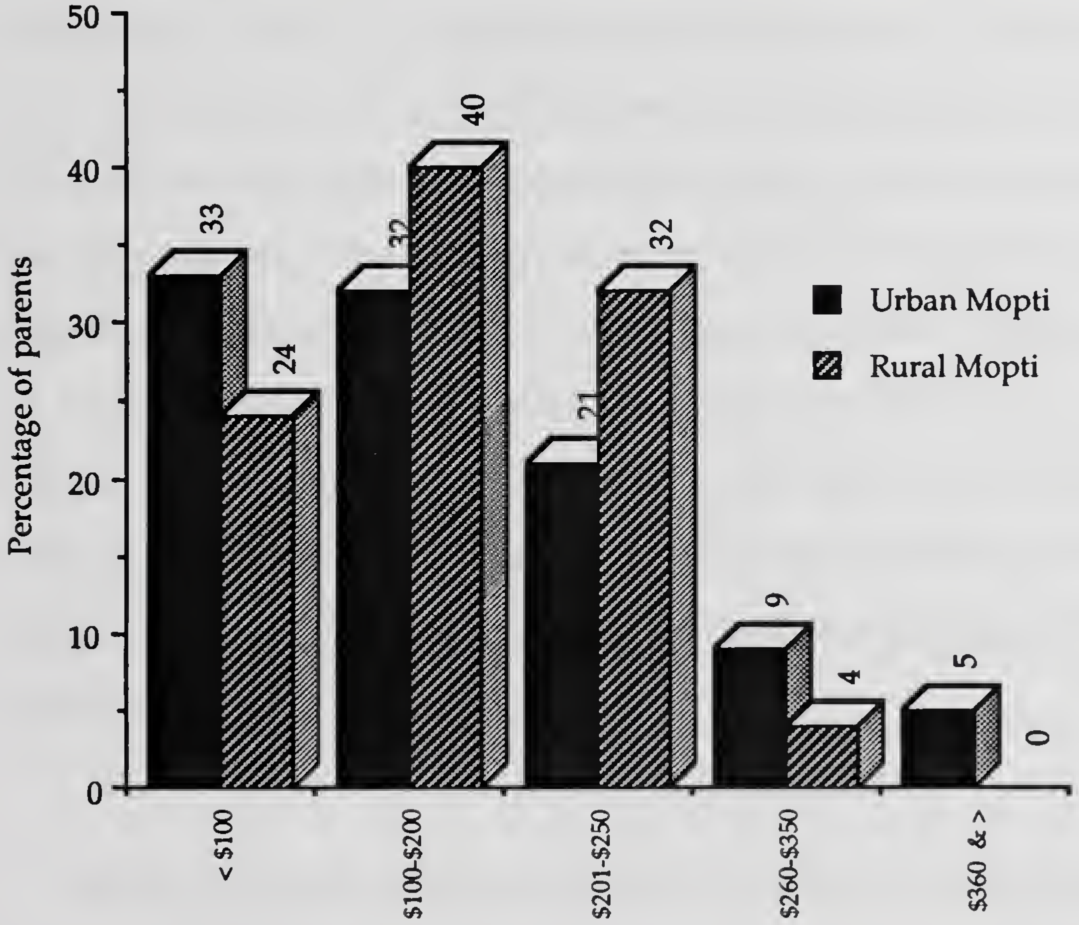

Figure 6. Proportions of parents' income distribution in Mopti.

Strengths and Limitations of the Study

Strengths of the Study

One advantage of this study is that the chosen research method is appropriate because of its ability to help generate retrospective data compared to longitudinal studies which take years to complete, while experimental studies also take too long given that policies are an issue here. The method also makes more people participate than would a series of case studies, for instance, which would be less generalizable. The study also has external validity for many reasons including the sample selection process (stratified random sampling) which gave parents from various classes, ethnic groups and regions the opportunity to participate.

This study uses original data collected from surveys designed for that purpose. The study controls for many factors in order to isolate the net effect of each. The study uses a clear model consistent with the literature. There was a high return rate due to the fact that most questionnaires were administered to parents in the form of an interview since they could not read or write. The study can also be generalized for many reasons. The sample selection procedure (stratified random sampling) gave the opportunity to various categories of parents to participate. Additionally, the region of Mopti includes all ethnic groups of Mali. Finally, more than 80% of parents in the sample were poor, farmers, fishermen, or in other similar occupations, just like the rest of the country and most less developed countries. Results can therefore be generalized, but with caution, beyond the regions which participated.

Limitations of the Study

Even though the study is expected to shed light on barriers to girls' education in Mali and which ones are the more important ones to address with policy, it

should be recognized that it is very difficult to account for all of the factors that directly and indirectly impact girls' schooling. For instance, data were not available on some of the variables hypothesized in the model. Such variables will not be included in the data analyses, meaning some aspects of the situation will not be revealed. There are conditions that are particular to only a given community or family while not all families can be contacted in one study. There may also be attitudes determined by factors other than those known to researcher.

The sample could have included more mothers. But it was quite impossible due to the family structure in the rural areas. For instance, for permission to reach anyone in the household, the father had to be contacted first. When contacted, fathers usually thought they knew what to say better than the mothers did. Despite the researcher's efforts, the proportion of mothers is limited. Second, rebel attacks at the time of the data collection in the region of Mopti made it impossible to reach some areas which had been randomly selected (i.e., Ténenkou). Such a defect was balanced, however, by the inclusion of quarters like Taykiri, within the city of Mopti, which was economically similar to, or even worse off than many remote rural areas in both regions.

CHAPTER 5

PRESENTATION AND INTERPRETATION OF FINDINGS

The main purpose of this chapter is to present and interpret the data collected and the analyses performed in order to determine the extent to which the enrollment and dropping out of girls are affected by household, supply, and school factors. Prior to testing the key hypotheses, it is deemed important, to present parents' affirmative responses to five issues retained for their importance: (a) the obvious reasons why many parents do not send their daughters to, or encourage them to remain in school, coded in the data as parents' strategy to keep girls at home; (b) religious influence measured by parents' belief in whether or not school will undermine their daughters' religious beliefs/values; (c) cultural influence measured by whether or not parents would choose marriage over school for their teen-age-daughter; (d) government intervention or assistance measured by whether anything was being done by the government in their area that parents believed could encourage or help them toward the schooling of their daughters; and (e) parents' perception of the distance away from school. Following the above, the three key hypotheses of the study are tested and discussed. The discussion of each hypothesis is supplemented by teachers, students and decision makers' views on the same issue. The results of the hypothesis testing are presented in tables followed by discussion.

Hypothesis Testing

The hypotheses were originally formulated respectively concerning household factors, supply factors, and school factors. To test for the impact of each, multiple regression is performed first on each equation separately controlling for the relative

significance of the other factors, and then on all three equations simultaneously. First ordinary least squares (OLS) was performed, then two stage least squares (2SLS) was also performed in order to take care of any possible simultaneous equation bias. The OLS results are discussed in the following sections and the 2SLS results are discussed in Chapter 6.

Household Factors and Demand for Girls' Enrollment

Hypothesis 1: Household factors have a significant impact on girls' enrollment in school.

The following results are from ordinary least squares (OLS). Two stage least squares was also performed and its results are presented in Chapter 6. The consistency of the results in both analyses suggests that there is no bias to be concerned about in this data set. Nine key factors were included in the regression equation testing the significance of each in parents' decisions to enroll their daughters. If fitted in the original equation for both urban and rural for the determinants of parents' decisions we get the following:

Q_D =.55+-.05 (distce) + .10 (parents' educ.) +-.04 (parents' strat.)+ .05 (Frgone) + .05 (Totinc) +-.008 (kidnum) +-.10 (safty) +-.04 (cultinf) +-.07 (Relignf) where Q_D is the proportion of girls who enrolled or dropped out in each family in the data; Distce = distance between home and school, Educ = parents' level of schooling, Strat = parents' strategy to keep daughters home, Frgone = opportunity cost, Totinc = parents' total income, Kidnum = number of children in the family, Safty = parents' concern for daughters' safety, Cultinf = the influence of parents' culture, and Relignf = the influence of parents' religion. The results of the regression analysis are displayed in table 5 below. Other related regressions and the significance levels of the *t*-statistics for their coefficients are shown in Table 6. We will discuss equation (1) and its properties (Table 5) first.

Table 5

Impact of Household Factors on Parents' Decisions Overall

Dependent Variable: Proportion of Girls Enrolled				
Source	DF	Sum of Square	Mean Square	F Value
Model	9	13.95451311	1.55050146	12.285
Error	189	25.85431243	0.12621329	p=.0001
C Total	198	37.80882554		
	Root MSE	0.3552651	R-Square=0.3691	

Clearly, the F-Value of equation 1 is high, 12.285, and very significant at p=.0001 level. The hypothesis is therefore retained, leading to the conclusion that household related factors as a whole are indeed significant in determining parents' decisions to send their daughters to school. The multiple R or R^2 indicates that 37% of the variance in parents' decisions is accounted for by those factors.

The analysis of equation (1) also shows that the most significant factors are: parents' income, parents' education level, and parents' strategy to keep girls at home. All t-statistics are significant at p=.02 level. Strategy, it should be mentioned, was revealed with two levels in the data. For some parents it was preference to hide or marry daughters off while for other parents lack of a school where they live was given as a response to the strategy question.

Hypothesis 1 was further tested by breaking down the data first into rural and urban areas for the whole data and then into rural urban areas within each region, using the same group of factors. This is shown in Table 4, equations 2 and 3, and equations 4 through 7.

Table 6

Effect of Household Factors on Parents' Decisions to Enroll Their Daughters in School

	b cœfficients for Both Regions Together		b cœfficients for Sikasso Region		b cœfficients for Mopti Region	
Equation No	Urban	Rural	Urban	Rural	Urban	Rural
List of Variables in Equation	(2)	(3)	(4)	(5)	(6)	(7)
Distance	.033	-.157	-.196	-.063	-.062	-.082
	(.671)	(.045)*	(.194)	(.398)	(.645)	(.665)
Parents' Educ	.038	.145	.164	.151	-.009	-.068
	(.359)	(.015)*	(.012)*	(.142)	(.881)	(.400)
Strategy to keep her home	-.180	-.016	-.052	.031	-.290	-.074
	(.007)*	(.419)	(.526)	(.093)*	(.029)*	(.609)
Forgone[a]	-.051	.088	.108	.084	.047	-.548
	(.495)	(.258)	(.332)	(.237)	(.684)	(.130)
Total income	.041	.039	.058	.030	.031	.121
	(.004)**	(.101)	(.015)**	(.183)	(.109)	(.057)*
Number of children	.005	-.009	-.009	-.034	.007	.015
	(.470)	(.423)	(.418)	(.008)**	(.576)	(.358)
Fear of teen pregnancy	-.239	.017	.065	.050	-.330	.047
	(.009)**	(.828)	(.526)	(.521)	(.012)**	(.838)
Culture	.061	-.206	.159	-.180	.065	.135
	(.434)	(.015)*	(.157)	(.027)*	(.591)	(.704)
Religion	-.068	-.100	.262	-.004	-.107	-.131
	(.382)	(.316)	(.086)	(.963)	(.286)	(.571)

[a] Additional information was gathered about rural incomes as estimated by ILO and was later added to the data to estimate the effect of forgone earnings. The results are discussed in Chapter 6.

* p≤.05. ** p ≤.01.

Table 7

Impact of Household Factors on Urban Parents' Decisions

Dependent Variable: Proportion of Girls Enrolled				
Source	DF	Sum of Square	Mean Square	F Value
Model	9	5.43005980	1.44648565	7.133
Error	75	6.34371230	0.13881206	p=.0001
C Total	84	11.77377210		
	Root MSE	0.2908313	R-Square	0.4612

Consequently, it appears that in urban areas 46% of the variance in parents' decisions to enroll their daughters in school is accounted for by the same key factors as listed above. The most significant factors influencing urban parents' decisions however are parents' strategy, parents' income, and parents' concern for their daughters' safety all significant at p=.01 level. Taking the same factors into account, 24% of boys' enrollment in urban areas are determined by household factors but none of them is particularly significant.

Table 8

Impact of Household Factors on Rural Parents' Decisions

Dependent Variable: Proportion of Girls Enrolled				
Source	DF	Sum of Square	Mean Square	F Value
Model	9	4.27375991	0.47486221	3.669
Error	104	13.46056305	0.12942849	p=.0005
C Total	113	17.73432296		
	Root MSE	0.3597617	R-Square=0.2410	

In rural areas on the other hand, 24% of the variance in parents' decisions seems to be accounted for by the same household factors. While parents' strategy, their income and their concern for daughters' safety determine their decisions in urban areas, distance away from school, parents' education level, and the influence of culture, expressed through parents' disposition to marry off a teen-age daughter rather than leave her in school, are the most significant determinants at $\underline{p}$=.05 level.

From the above three equations respectively representing the overall impact of household factors on parents' decisions, their impact on urban parents, and then on rural parents, it appears that the most important factors are parents' income, parents' education level, the strategies some parents use (or are imposed) in order to keep their daughters out of school, parents' concern over girls' safety from teen pregnancy in school, the distance away from school, and the influence of cultural practices. The factor strategy (strat) which has two components: (a) marrying girls off or hiding them, (b) the absence of school in area where parents live turned out significant in urban areas which do not lack school.

When the data are looked at by region, it is rather in the region of Mopti that the influence of culture came out stronger. There, 56% of parents believe marriage is better than school for their daughters against only 24% of parents in Sikasso. The argument can be made that cultural constraints reflected through parents' preference for their daughters' marriage over their schooling do exist in Mali but are more accentuated in some areas that in others. Furthermore, the fact that safety proved to be significant is indicative of the importance of teen pregnancy. To that effect, many rural parents also recognize that it is a problem although they would not prevent their daughters from going to school for that reason if given the opportunity.

As far as boys' enrollment in rural areas is concerned, 30% of the variance in parents' decisions seem to be accounted for by household factors among which

distance (p=.024), parents' education (p=.0001), and family income (p=.055) are the most significant factors. While distance and parents' education are significant in both cases, income counts more in boys' enrollment while the influence of culture shown through early marriage counts more for girls.

It should be mentioned that distance was not statistically significant in rural Sikasso mainly due to lack of variance in parents' responses. In other words, parents are unanimous and it was obvious to the researcher since most families, with the exception of those living in the village housing the school, live four to thirty kms away from school. Distance, even when statistically non-significant here, is one of the most important hindrances.

Decision Makers' View of Enrollment Demands

Decision makers recognize that girls' schooling is what it is in Mali due to the lack of particular attention to the issue and willingness to invest in schools, to reduce the distance, provide textbooks and teachers for a long time. (Interview with officials from "Cellule Scolarisation des Filles," and Vice President of APE). They all seem to believe a girl is too valuable an asset for the family, in particular in rural areas, and that sending her to school without any alternatives creates a difficult situation for mothers. The conversations with those officials also indicate their recognition of the fact that more efforts need to be made by the Malian Government if this problem is to be properly addressed.

Teachers who know both students and their parents seem to share the same view as parents on some things but disagree with them on others. For instance, like parents, 84% of teachers believe teen pregnancy is a serious problem in girls' retention. Ninety percent (90%) of teachers also agree that the family culture negatively affects girls. Sixty-seven percent of teachers believe the opportunity cost parents incur by sending their daughters to school constitutes a problem for many

girls, and 87% of them also believe that parents are more likely to invest in boys than in girls when they have limited resources. Parents however, are equally divided on the issue of opportunity costs: 50% of them agree while 50% disagree that their daughters do work at home that leaves them little if any time to study. An additional interesting finding is that 68% of teachers feel there is a general misinterpretation by other students and by people in the community of male teachers' attitude when they give particular attention to girls.

Household Factors and Girls' Retention

The following sections discuss the same demand equation as above but with regards to retention as the dependent variable. When it comes to the effects of household demand factors on girls' retention, measured here by their dropout figures in each family, the picture is somewhat similar to that of enrollments.

Table 9

Effect of Household Factors on Girls' Dropping Out

	b cœfficients for Both Regions Together		b cœfficients for Sikasso Region		b cœfficients for Mopti Region	
Equation No	Urban (8)	Rural (9)	Urban (10)	Rural (11)	Urban (12)	Rural (13)
List of Variables in Equation						
Distance	.021 (.920)	-.311 (.028)*	-.861 (.087)*	-.305 (.024)*	.375 (.249)	-.126 (.809)
Parents' Educ	-.359 (.001)**	.150 (.159)	-.168 (.404)	-.076 (.676)	-.412 (.007)*	.173 (.434)
Strategy to keep her home	-.096 (.588)	.010 (.780)	.352 (.200)	.030 (.363)	-.472 (.132)	-.098 (.803)
Total income	.030 (.432)	.130 (.002)**	.050 (.500)	.091 (.024)*	.049 (.283)	-.010 (.943)
Number of children	.072 (.001)**	-.093 (.000)*	.069 (.071)*	.039 (.088)*	.076 (.016)*	.240 (.002)*
Fear of teen pregnancy	-.571 (.020)*	.147 (.324)	-.903 (.070)*	.094 (.495)	-.309 (.311)	.243 (.704)
Culture	-.145 (.491)	-.165 (.279)	.577 (.120)	-.145 (.308)	-.717 (.018)*	-1.27 (.227)
Religion	.053 (.800)	.089 (.621)	.969 (.056)*	-.087 (.594)	-.071 (.765)	1.69 (.036)*

* $p \leq .05$. ** $p \leq .01$.

It first appears strange to see that the coefficients for distance, culture, religion, and fear of teen pregnancy carry negative signs which indicate that the greater the factor, the lower the drop out rate while the opposite result would be expected. After checking for coding inaccuracies however, the researcher believes it is attributable to the nature of the data. Parents who perceive the listed factors as a problem have very few if any daughters enrolled and consequently, have few or no drop outs. On the other hand, there are parents who have a few daughters who

dropped out of school but who do not perceive any of those factors as a problem. In many families in rural Sikasso for instance, not one child goes to school while in others only one does. According to the researcher, this is the best possible explanation to such a finding in this particular data set. In other words, the drop out rate is not independent from the enrollment rate in this case. These remarks are also true for Tables 16 and 23.

Table 10

Impact of Household Factors on Urban Girls' Dropping Out

Dependent Variable: Proportion of Girls Who Dropped Out				
Source	DF	Sum of Square	Mean Square	F Value
Model	9	15.36859898	1.70762211	2.792
Error	75	45.385845985	0.6171280	p=.0071
C Total	84	61.24705882		
	Root MSE	0.7821207	R-Square=0.2509	

Twenty-five percent of the variance in girls' dropping out in urban families is accounted for by household factors. The particularly significant ones are: parents' education (p=.002), the number of children in the household (p=.0010), and concern for safety (p=.0209). It is useful to add that mother's education found in many studies to be an important factor is weakly seen in this study due to the fact that very few mothers participated while most of those had also had no schooling.

Table 11

Impact of Household Factors on Rural Girls' Dropping Out

Dependent Variable: Proportion of Girls Who Dropped Out				
Source	DF	Sum of Square	Mean Square	F Value
Model	9	29.80141349	3.31126817	7.852
Error	104	43.85648125	0.42169694	p=.0001
C Total	113	73.65789474		
	Root MSE	0.649382	R-Square=0.4046	

Among rural families 40% of the variance in girls dropout is accounted for by household factors compared to 25% in urban areas. The most significant factors are: distance away from school (p=.03), parents' total income (p=.003), and the number of children in the household (p=.0001). Altogether, parents' education, parents' income, concern for safety, distance of home away from school, and the number of children in the household constitute the most significant factors in girls' dropping out in Mali. The following table presents factors relative to girls' drop-out with their respective betas and the significance level of each.

Supply Factors: The Supply of Places in Schools

Hypothesis 2: Supply factors have a significant impact on girls enrollment and retention in school. As for the demand analysis, the following results are also from ordinary least squares (OLS). Here too two stage least squares was performed but showed no important difference worth discussing. While some variables were not included in the quantitative analysis because they were rather qualitative, others were left out due to insufficient or unclear responses on them.

Four factors were used to test hypotheses regarding the supply side factors. Fitting them in the original equation for the whole data for the impact of supply factors on girls' enrollment in school we get the following:

QD= .76 + -.13 (Govhelp) + -.13 (sanctns + .05 (boro) +-.18 (distce) where: QD=(proportion of girls enrolled or dropped out by family); Govhelp =government intervention or investment in the area, expressed through any on-going activity--physical or verbal--that parents' believed might give them some encouragement regarding the enrollment of their daughters; (sanctns)= whether compulsory education policy is enforced, for instance through government sanctions that could change the attitude of reluctant parents regarding girls' schooling; (Boro) =whether borrowing opportunities are available to parents--money that can help them in their efforts to school their daughters; and (distce) =did the government provide schools near the parents' area of residence?

First will be discussed the effects of supply factors as a whole, then follows the interpretation of the same analysis broken down by urban rural. In both ordinary least squares and the two stage least squares, simultaneous as well as individual analyses, supply factors seem to have a significant impact on girls' access to school in Mali.

Table 12

Impact of Supply Factors on Girls' Overall Access to School

Dependent Variable: Proportion of Girls Who Enrolled				
Source	DF	Sum of Square	Mean Square	F Value
Model	4	4.29821	1.07455	6.399
Error	180	30.22520	0.16792	p=.0001
C Total	184	34.52342		
	Root MSE	0.40978	R-Square=0.1245	

As can be seen in the ANOVA summary table above, supply factors as a whole affect girls' access to school in a negative way as hypothesized in his study. The multiple regression, in both ordinary least squares show an F value of 6.399 with a p value of .0001. The absence of schools in parents' area of residence (t =-2.850) and parents' perception of compulsory education (t=-2.769) are the most important factors. Parents' perception of he absence of other government efforts in their area of residence also has a negative impact (t=-1.450) close to significance but not significant.

The effect of supply factors on girls schooling in urban and rural areas show slightly different results. While this hypothesis is rejected in urban areas it is retained in rural areas. In urban areas, there is no significance associated with any of the supply factors for either girls' access or their retention as can be seen below. The results are similar for boys as well. This leads to saying that urban areas appear to be relatively better supplied with those basic needs for schooling and that problems girls encounter there are not due to the above tested factors. In sum, the significance of the hypothesis as a whole lies in the importance of those factors in rural areas.

Table 13

Effect of Supply Factors on Girls' Access in School

	b Cœfficients for Both Regions Together		b Cœfficients for Sikasso Region		b Cœfficients for Mopti Region	
Equation No	Urban (14)	Rural (15)	Urban (16)	Rural (17)	Urban (18)	Rural (19)
List of Variables in Equation						
Lack of Gov't help	.048 (.631)	-.283 (.023)*	.068 (.656)	-.204 (.127)	-.119 (.521)	-.483 (.151)
Lack of enforcement of compulsory educ	-.036 (.685)	-.032 (.671)	-.145 (.472)	-.041 (.588)	-.046 (.705)	-.070 (.734)
No borrowing opportunity	-.048 (.593)	.012 (.861)	.110 (.506)	.065 (.374)	-.160 (.264)	-.105 (.708)
Distance	-.028 (.775)	-.177 (.019)*	.004 (.980)	-.068 (.383)	-.047 (.766)	-.546 (.056)*

* $p \leq .05$.

As presented below however, the hypothesis is retained in rural areas since the involved factors seem to influence parents' decisions.

Table 14

Impact of Supply Factors on Girls' Access in Rural Areas

Dependent Variable: Proportion of Rural Girls Enrolled				
Source	DF	Sum of Square	Mean Square	F Value
Model	4	2.13274891	0.53318723	3.986
Error	104	13.91032053	0.13375308	p=.0048
C Total	108	16.04306944		
	Root MSE	0.3657227	R-Square=0.1329	

The above ANOVA summary table indicates that in rural areas, 13% of the variance in girls' enrollment is accounted for by supply factors. The absence of any form of activity or incentive that might help change parents' attitude, (p=.02) and distance of school away from home which is discouraging to both parents and students (p=.02) came out as the most significant factors, as can be seen in the above table. Hypothesis 2, therefore, holds more in rural areas, as suspected, than it does in urban areas. Both lack of government assistance and distance show a significant, negative impact on access with respective t-statistics of-2.300 and -2.372. In the data as a whole, the same factors also affect boys' access but it is interesting to notice that the lack of government investment or intervention affects girls' access more than that of boys' (t=-1.186) while distance affects boys more strongly (t=-3.076) than it does girls.

Table 15

Impact of Supply Factors /Governments' Decisions on Girls' Dropping Out in Rural Areas

Dependent Variable: Proportion of Girls Who Dropped Out

Source	DF	Sum of Square	Mean Square	F Value
Model	4	7.69876076	1.92469019	3.207
Error	104	62.41133099	0.60010895	p=.0158
C Total	108	70.11009174		
	Root MSE	0.774667	R-Square=0.1098	

When it comes to girls' retention, 11% of the variance is accounted for by supply factors, with distance (p=.0027) being the most significant factor in this case. That is easily understood since the nearest rural school in the sample is three kilometers away from most of the households which participated in the study.

Hypothesis 2 is also retained because the data back the fact that at least one supply factor is significant in girls' dropout in rural areas. The following table summarizes the concerned variables with their respective betas and the significance of each.

Table 16

Effect of Supply Factors on Girls' Retention

	b cœfficients for Both Regions Together		b cœfficients for Sikasso Region		b cœfficients for Mopti Region	
Equation No	Urban (20)	Rural (21)	Urban (22)	Rural (23)	Urban (24)	Rural (25)
List of Variables in Equation						
Lack of Gov't help	.140 (.595)	-.309 (.238)	-.077 (.848)	-.228 (.301)	.666 (.192)	-.718 (.610)
Lack of enforcement of compulsory educ	.186 (.433)	-.083 (.601)	-.845 (.230)	-.073 (.568)	-.052 (.873)	.984 (.296)
No borrowing opportunity	.340 (.154)	-.103 (.504)	.091 (.834)	-.011 (.926)	.412 (.289)	-.273 (.825)
Distance	-.226 (.383)	-.488 (.002)*	-.311 (.543)	-.335 (.011)*	-.258 (.548)	-.843 (.463)

* $p \leq .05$.

Decision Makers' Views: Opinions About Supply

On the policy side, like parents, 85% of teachers believe compulsory education is not enforced in Mali, but 59% and 53% of teachers believe there are efforts to respectively address greater access and retention in school. Contrary to 81% of parents who say they know the importance of school for girls however, 93% of teachers think parents do not know the facts about the benefits of female schooling, and 80% believe parents think school is not for girls. Rural teachers and students as well as rural parents perceive the lack of schools and distance from the existing ones

more as a problem than their urban counterparts. Fifty-nine percent of teachers believe distance is not a problem for girls. This is surprising at first given the significance of distance in the regression analyses, but it is due to the fact that most teachers, are from urban schools. For instance, some of the existing rural schools have three classrooms for six levels, therefore two levels being taught by an instructor.

The variable "Govhelp" on the other hand, was statistically non significant in the separate regional analysis but it should be mentioned also that parents were almost unanimous about the absence of government investment, especially in the rural areas. Lack of variance, therefore, could be at the origin of its non-significance. As seen earlier in Table 4, 79% of parents in Sikasso, and 79% of parents in Mopti--more rural than urban--agree that there exists no government effort in their areas that encourages or motivates them in sending more daughters to school. School administrators believe that girls constitute the backbone of their families in rural Mali and that the forgone earnings from letting them go to school can make life very difficult for rural mothers. One rural school director said:

> I think girls are a treasure. For instance, they do everything for the family, they do not go away on exodus or when they leave, they come back with money to help the family, it is them who do most of the field maintenance work, they harvest karitea/shea butter in May and process it etc. I try to convince them that school makes girls a better treasure but it is hard because the family cannot replace them.

Decision makers tend to recognize the government's failure to do more regarding the development of rural areas but attribute it to the state of the country's economy as a whole. Since Mali's population is thinly spread, decision makers also believe that rural inhabitants' resistance to relocation--to move from their villages to areas where there are schools--accounts for part of the problem.

School Supply Factors: (Qs2) Quality

Hypothesis 3: Treatment of students in school has a negative impact on parents' decisions.

Three factors were used to measure the impact school variables could have on parents: (a) parents' preference of a female instructor for their daughters, (b) parents' belief in the quality and relevance of what their daughters learn in school, and (c) the location of the school away from home and whether parents' believe it is a disadvantage. If we fit those variables into an equation, we get the following:

$Q_D = .65 + -.03$ (Tchrsex) $+ -.02$ (schqual) $+ -.27$ (Distce) where: Q_D = girls' enrollment or dropping out of school; Tchrsex = whether parents prefer a female teacher for their daughters; and schqual = parents' perception as to whether school teaches anything useful to their daughters or not, Distce = whether a school has been provided. As the previous two hypotheses, this one has also been tested first through the data as a whole and divided by urban rural, then in each region divided by rural-urban. First we discuss the overall then the urban-rural results.

Table 17

Impact of School Quality (Supply-2) Factors on Girls' Schooling

Dependent Variable: Proportion of Girls Enrolled				
Source	DF	Sum of Square	Mean Square	F Value
Model	3	3.98369959	1.32789986	7.621
Error	182	31.71007537	0.17423118	p=.0001
C Total	185	35.69377496		
	Root MSE	0.4174101	R-Square=0.1116	

In the data as a whole, 11% of the variance in parents' decisions to enroll their daughters is accounted for by factors related to school. Distance has a negative coefficient significant at p=.0001. The lack of school close to the family is the most important factor among reasons why girls enrollment school is low. Many parents did not seem to particularly care about the instructor's gender. Some even expressed preference for male instructors thinking they would be more qualified than female teachers. As to the quality of schooling, many parents did not think they qualified to judge it since they were not educated themselves and do not even know what is taught. While a few parents believed school taught nothing useful for girls, others, among the educated parents, compared its general quality to that of colonial times and thought it was better then. As it appears therefore, girls do not enter because they either have no school or because the existing school is too far from their area of residence. Beside the absence of school and the remoteness of the existing ones, it should be added that most rural parents in the region of Sikasso said that an additional reason why their children (boys and girls) do not go to school is that they are not called upon. We deal with a policy issue here since it is the government that is expected to make schools available to all, or find alternatives for

those who cannot reach the existing schools. According to parents, a representative of the authority comes from the city, at the beginning of each school year, with a list of children who are to be recruited. As a result of such a practice, therefore, only those few have a chance to start school each year.

Does the Absence of Quality Favor Girls' Dropping Out?

Table 18

Impact of School Factors on Parents' Decisions for Both Regions

Dependent Variable: Proportion of Girls Who Dropped Out				
Source	DF	Sum of Square	Mean Square	F Value
Model	3	8.4546322	2.81821307	4.503
Error	182	113.89482	0.62579573	p=.0047
C Total	185	122.34946		
	Root MSE	0.7910725	R-Square=0.0691	

Overall, 6% of the variance in girls' dropping out is accounted for by school factors but it is important to mention that distance (provision of school close to the place of residence) has a negative coefficient, significant at p=.0037, and school quality (p=.0639) getting very close to significance. Those two imply that distance as well as parents' lack of conviction of the quality of what instruction their daughters receive are important factors in parents' willingness to help girls stay in school.

Table 19

Summary of The Effects of School Factors on Girls' Enrollment

List of Variables in Equation	b Cœfficients for Both Regions Together		b Cœfficients for Sikasso Region		b Cœfficients for Mopti Region	
Equation No	Urban (26)	Rural (27)	Urban (28)	Rural (29)	Urban (30	Rural (31)
Female teacher preferred	-.093 (.321)	.026 (.732)	-.177 (.259)	-.104 (.156)	-.102 (.423)	.378 (.023)*
Poor school quality for girls	-.088 (.386)	-.111 (.302)	.148 (.400)	-.035 (.747)	-.178 (.166)	-.450 (.010)**
Distance	-.205 (.030)*	-.255 (.001)**	-.023 (.898)	-.063 (.401)	-.269 (.039)*	-.596 (.001)**

* $p \leq .05$. ** $p \leq .01$.

Table 20

Impact of School Factors on Urban Girls' Enrollment

Dependent Variable: Proportion of Girls Enrolled				
Source	DF	Sum of Square	Mean Square	F Value
Model	3	1.48259487	0.49419829	3.796
Error	69	8.98211921	0.13017564	p=.0140
C Total	72	10.46471409		
	Root MSE	0.3637986	R-Square=0.1417	

Distance, indicating in this case whether the Government supplied schools in area of residence or not, has a significant, negative coefficient in urban female enrollment as well (p=.0302). In fact it seems to account for 14% of the variance in girls' enrollment. Though most of the parents' residence areas have schools , not all families live close to the school. Such a difference may therefore account for the significance of distance. This suggests that distance is a problem in both urban and

rural areas though it is more accentuated in rural areas. As for boys enrollment in urban areas, it is also affected by school factors which seem to account for 10% of the variance in their access, with distance as the most significant factor (p=.030).

Table 21

Impact of School Factors on Rural Girls' Enrollment

Dependent Variable: Proportion of Girls Enrolled				
Source	DF	Sum of Square	Mean Square	F Value
Model	3	1.68835775	0.56258792	3.948
Error	109	15.53654512	0.14253711	p=.0103
C Total	112	17.22490288		
	Root MSE	0.3775409	R-Square=.0980	

Rural girls' access to school: The absence of schools has a significant, negative impact here as well (p=.0014). In sum, distance comes out as the most consistently significant factor in girls' enrollment in rural as well as in urban areas but more so in rural areas than in urban areas. This is further backed by the fact that most girls stated that living far from school and having to walk discourages them from attending. In the teachers' survey, urban teachers tend to minimize the effect of distance because most teachers are in urban areas and do not therefore perceive the problem the same way as rural teachers. Distance, as relative to school factors, has an even stronger effect on boys: t=-3.961 at (p=.0001) against t=-3.278 at (p=.0014) for girls. School figures show that boys attend school more than girls and this is more so in rural areas than it is in urban areas. That fact could be the reason why boys seem to be more affected by the lack of school than girls, given that they are the ones who attend.

Table 22

Summary of The Effects of School Factors on Girls' Dropping Out

	b cœfficients for both Regions Together		b cœfficients for Sikasso Region		b cœfficients for Mopti Region	
Equation No	Urban (32)	Rural (33)	Urban (34)	Rural (35)	Urban (36)	Rural (37)
List of Variables in Equation						
Female teacher preferred	-.048 (.823)	.295 (.062)*	.424 (.292)	-.046 (.714)	-.521 (.073)*	1.81 (.012)**
Irrelevant school quality for girls	.250 (.286)	.237 (.282)	.325 (.470)	.041 (.829)	-149 (.602)	-.252 (.707)
Distance	-.115 (.589)	-.501 (.002)**	-.614 (.197)	-.290 (.028)*	.294 (.307)	-1.04 (.126)

* p≤.05. ** p ≤.01.

Decision Makers' View Regarding Quality, and the Government's Will to Supply It

The interviewed educational decision makers think there are serious problems that are only now starting to come to light for all those involved in the educational leadership. Such problems are for instance, the curriculum which most of them think must be changed although they admit the process has not yet started. They also think the proportion of female teachers reflects that of female schooling in general. Teachers and school administrators had the difficult task of telling about their students, the parents of those, and about themselves. Eighty-one percent of teachers (n=134) believe boys are more motivated than girls to study in school. As to teacher attitude toward female students, there seems to be a teacher bias that affects girls in school. Though not the majority, an important 42% of teachers said they always expect a girl to fail school, while 44% believe that teachers' verbal and/or physical abuse has a negative impact on girls in school. Forty-nine percent believe

girls would rather have a female teacher, but 61% do not think the curriculum content is more male oriented. It should be mentioned that there were no female teachers in the rural areas and female teachers in the urban schools, just like female students, represent the minority among the males.

Important Issues Picked up During Data Collection

A great deal of dissatisfaction was manifested by parents and female students about instructors' behavior towards "daughters of the poor" in both regions. In one particular village in the region of Sikasso, the dissatisfaction was translated into distrust and disinterest towards school, towards teachers and towards the whole administrative process. Villagers think they are used "they take our money all year long while we see nothing in return," cheated,

> Our children go there, the teachers make boys work for them and abuse girls and end up expelling them from school. We have no power and since the children of the poor never succeed in school, why bother send them and waste their time while they could stay here and help us?

Distrust leading to disinterest, therefore, seems to be an additional factor although its significance was only indirectly picked during individual discussions with parents in this study.

Boys are also disadvantaged in rural areas. This study was particularly interested in girls' plight but a lot was discovered about boys as well. In rural areas, it is not girls only who are disadvantaged, it is the rural child in general as most rural parents were quick to explain every time a question was asked about a daughter: "it is not just our daughters, our sons do not go to school either." Chapter 6 includes more comparisons between boys and girls.

The lack of evidence that school can have any benefit for them and the absence of role-models are also two factors that seem to affect girls' access to and retention in

school. Given low enrollment rates and the dropping out of most of the few who enroll among both boys and girls, and given that those who "make it" break up with the tradition to some extent, school is almost perceived as a negative agent. Furthermore, these facts are also compounded with the lack of schools or places in existing schools and the failure of the government to encourage and enforce compulsory education in those areas. All those together, make rural parents believe they are not concerned.

The language of instruction is a problem which needs immediate attention if better results are to be achieved through the new endeavor. Good communication in French with youngsters, even at the upper primary levels is practically impossible without translation into their mother tongues. For instance, the part of the questionnaires filled out by students had to be translated into local languages even for ninth graders. Additionally, children do not understand what is said and are not sure they know what they say. For instance, every time I entered some primary school classrooms pupils would stand up (a customary way of greeting visitors or other instructors, with respect) and say: good morning/afternoon sir. French is clearly a big disadvantage for most children especially girls who are usually shier than boys.

Some of the interviewed decision makers indicated that parents' contribution to school funding is diverted towards other problems while their children's schooling is neglected. Most of them also seem to indicate that funding needed in order to promote greater female schooling will come from sources other than the national budget. There is a danger in such an attitude since if seems that the host government does not try to gradually incorporate this concern in its national budget so as to come up with the additional expenditure that will be needed to carry on at the end of the project. The decision-makers or other officials involved with the educational project seem to indicate that by the time the current project ends, there

will be another one to follow up with further female schooling efforts. One highly placed official however, recognized that the Malian government gives little more than lip-service to the issue and that it is time they all get involved and learn how to stop banking on foreign aid.

Summary

In this chapter were presented and interpreted the three hypotheses discussed in the model, relative to the effect of demand, supply of places and school quality on girls' access and retention in school in Mali. As presented above, while the demand hypothesis is retained in both rural and urban areas, hypothesis 2, related to political commitment, and hypothesis 3, relative to school factors, seem to hold more in rural areas than in urban areas. Household demand factors, supply of places (for rural areas), and school quality (more a problem in rural areas) all affect girls' access to and retention in school in Mali.

Boys schooling is also affected by those factors. Most of the time to a lesser degree than that of girls but sometimes even more (see additional tables in Chapter 6). As expected and usually supported by the existing literature therefore, rural areas are more disadvantaged than urban areas. In all, household factors seem to be the most important ones, then come the supply factors, and then school factors in third position, in particular in rural areas. It must be pointed out that government investment or other type of intervention alone is a factor that seriously affects rural areas and that needs to be addressed if any significant change is to be achieved in female schooling in Mali. Boys, in the rural areas in particular, are also affected by the factors which affect girls, sometimes more than girls but to a lesser extent, most of the time.

In sum, rural parents and some poor parents in urban areas fail to send their daughters to school because they do not know of the importance of schooling (lack

of parental education), or due to low socioeconomic status (as seen earlier most parents are poor and have access to no other assistance or technology but their children/daughters' help). Besides those reasons, there is poor or no investment in rural areas that could have helped parents in a significant way, and compulsory education is not enforced, as recognized by both parents and teachers.

This lack of government commitment is also noticeable through the lack of schools, or lack of sufficient school places in the existing ones, and the remoteness of school from parents' area of residence. Finally, the results show that girls' safety is also a factor in both rural and urban areas. Girls suffer from physical and verbal abuse (in class as recognized by more than 40% of teachers themselves), and from sexual harassment outside of the classroom which all scare them and discourage them. Teen pregnancy, as a result, is as much of a concern to parents as their daughters' safety is and those make parents turn to options such as early marriage. Additionally, observation and teacher survey reveal that girls see few or no female teachers in their schools in rural areas which means they have no role models . For all these reasons, it can be concluded that given their resources, their fears, and their limited power and alternatives, parents attitude towards the schooling of their children in general and their daughter in particular, is a realistic one. What is missing in Mali is the sufficient conditions and opportunities to send their daughters to school without too much concern.

CHAPTER 6

DEMAND, SUPPLY OF PLACES, AND SCHOOL QUALITY: RESULTS OF SIMULTANEOUS EQUATION ANALYSES

The purpose of this chapter is to analyze the interaction and estimate , by simultaneous equation method, the three equations expressing separately household behavior, the behavior of the school system in supplying places, and the support by the government for improving quality.

Three variables were added for this additional step in the analysis: an estimate of the opportunity costs incurred by rural parents when they send their daughters between age 6-15 to school, an estimate of the minimum fees parents pay for school materials their children need during a school year (nine months); and the per pupil expenditure made annually by the government.

The Logical Structure of the Decision Process

The basic model in Chapter 3 and the hypotheses it contains postulates that the demand for enrollment by the family depends on the price, S (Tuition and Fees), forgone earnings costs to the parents, C_{FE}, and a number of exogenously determined variables, Zi's:

(1) $Q_D = a_1 S + a_2 C_{FE} + a_i Z_i$ where: Q_D is the enrollment or dropping out per family, S is the total price of schooling to parents. In rural areas, since schooling is entirely free, when available, these fees essentially come to the costs of school supplies and other needs such as clothing, shoes and so forth. In urban areas it includes such expenses plus an annual contribution all parents pay. C_{FE} is the opportunity costs to parents for sending their daughters to school, and Zi is all the other factors. For rural families, the forgone earnings costs, C_{FE}, are considerable since young girls pound grain, go fetch water and wood (fuel for cooking), care for

young children, and do other household chores releasing the mother to work in the fields.

Forgone earnings, C_{FE}, were estimated based on ILO 1978 minimum wage information on Mali (ILO, 1982, p. 77). The estimation took the current currency and maid salaries into account to come up with an average salary for a young girls. The estimated income for a girls between age 6-15 was therefore \$20.00 US per month, thus \$180.00 for nine months, a given school year. This forgone earning was primarily for girls for two key reason: first, it is rather girls who commonly leave their families or are given to other better-off ones where they work as maids; second, girls are the ones who most of time perform household chores which take away studying time. Additionally, girls who do not become maids practice some type of commerce such as selling fruits or vegetables and bring the money home.

Independent of these family ex-ante decisions, school authorities supply school places (Q_S):

(2) $S = b1\ Qs + b2\ P + bj\ Zj$. Where: S is the price of schooling, Qs is the total supply, P is the per pupil expenditure and Zj the other factors. These places are of a quality level given by P, the expenditure per pupil by the government. At the same time, the government makes decisions about the amount of resources to be provided to the local schools, which determines P, the expenditure per pupil:

(3) $P= c1 + Zk$.

This expenditure level however, can be assumed to be exogenous in Mali. Though there is a tax base dedicated to the local schools, parents lack control over that local tax rate and the way such taxes are spent. So equation 3 can be substituted into equation 2 later. It is kept separate for the time being to reduce multicollinearity. The resulting set of equations is then estimated by two stage least squares simultaneous equation methods.

School expenditure (P) in Mali averages $60.00 per pupil throughout the country. However, given the conditions in which the surveyed rural schools, and rural schools in Mali in general work, there is an insufficient number of classrooms, (one half of those in an urban school) insufficient number of teachers, (one half of those in an urban school) lack of latrines (non-existent) and other services compared to urban schools. Based on those estimates (one half twice, and zero), one third (1/3) of the average per pupil expenditure, $20.00, was retained as the per pupil expenditure in rural schools.

Simultaneous Equation Estimates

The following results are from regression analyses performed using two stage least squares in the Statistical Analyses System (SAS). While Chapter 5 emphasized rural urban differences, we will now focus on the gender differences with a particular attention to endogeneity, per pupil expenditure, and education policy.

This chapter includes three main parts. First a discussion of the effects of the identified factors on boys' and girls' enrollments. Second, this is followed by a discussion of the effects on boys' and girls' dropping out, and third, it concludes with a discussion of the effects of policy variables alone on both boys' and girls' enrollment and dropping out. Each discussion section includes a summary table showing the beta coefficients, the corresponding t-statistics and their significance levels for each of the three categories of variables involved. The summary tables are also followed by a detailed interpretation of each result they display, and what its implications are. Where relevant, the results are compared to those presented in Chapter 5.

Girls' Enrollment

Household Factors

For household demand factors, the regression analysis results in a high $\underline{F}$ = 34.929 significant at $\underline{p}$ = .0001 (see Table 23 below). The results suggest that the impact of the four household factors in the equation: parents' education level, parents' income, the opportunity costs to parents for sending their daughters to school, and the fees parents pay for their enrolled children's school supplies and other, play a very important role in parents' decision regarding demand for schooling for their daughters. Nearly 50% the variance in girls' enrollment are accounted for by those factors ($\underline{R}^2$ =48%).

It is interesting to notice that all household related factors in equation 1 are significant at levels varying from $\underline{p}$=.002 to $\underline{p}$=.027. Such significance indicates that the data support the null hypotheses.

Parents' education--The hypothesis in Chapter 3 is that lack of schooling among parents restrains girls' school participation. This hypothesis is confirmed by results indicating that in fact, the greater the parents' education level, the higher their daughters' school participation. In other words, parents with no schooling are likely to keep their daughters home because they do not value schooling among other reasons. It is also apparent in the data that lack of schooling is more prevalent among rural parents the same way school participation is lower among rural girls. These finding support aspects of the literature indicating that parents' level of education and schooling tradition of a given area are important determinants of children's school participation in that area. The reason for the importance of schooling tradition is that when parents themselves have had no schooling, they do not value schooling and neither know, nor believe in its real importance for their children.

Household income--The hypothesis in Chapter 3 also indicates that the higher parents' income level, the higher will their daughters' school participation be. The regression results support this hypothesis, supporting that parents who earn higher salaries or other revenues, have more daughters enrolled. Logically, this is sensible since forgone earnings and fees will be less of a burden to such households. The findings back the literature on girls' schooling which widely documents this positive relationship more through case studies and observations.

Forgone earnings--Furthermore, results in Table 23 indicate that the higher the forgone earnings, the lower the female participation. This is also largely discussed in the literature on female schooling but not empirically tested. It is a fact however, that women, rural women in particular, carry most of the burden of domestic chores and they share it with their daughters. Consequently, the poorer the family, the less able they are to pay for assistance, and the more overburdened the mother and the daughter get, making it impossible for the girls to go to school or for the mother to manage alone.

Fees (or price)--As hypothesized in Chapter 3, household related factors also indicate that the higher the school related fees, the less likely are girls to attend. Like forgone earnings, this is directly related to earnings. When there is low or no income for the household, there are no means to satisfy the family's subsistence needs, much less ways of assuming the girl's schooling needs. As discussed earlier, most parents are generally poor as presented in Figures 5 and 6 in, Chapter 4, and depend mainly on agriculture which requires tiring labor with no guaranteed success since rainfalls are not always dependable.

Factors Related to the Supply of Places

From the results presented in Table 23, it can be seen that 43.46% of the variance in girls' enrollment appear to be accounted for by the supply of schools/

school places by the government with a significant F value of 18.958, significant at $p = .0001$. The hypothesis that parents' decisions to enroll their daughters are also affected by government supply factors such as: per pupil expenditure, the amount of money parents spend on school supplies, the availability of school(s), additional investment in area by the government to encourage parents, the enforcement of compulsory education, and opportunities for parents to borrow money for their children's schooling hold at least for some of the factors. Of those, three variables, the availability of schools, the fees paid by parents, and the per pupil expenditure are the most significant ones. While in the OLS results, in Chapter 5, 12.5% of the variance in girls' enrollment were explained by these supply factors, it appears, in this simultaneous estimate that when per pupil expenditure is taken into account, the supply factors gain even more significance. In other words, the school building and the amount of money the government makes available for schooling plays a crucial role in determining girls' participation.

School Quality

School quality is used in two ways in this chapter. First, the hypothesis that school related factors have a negative influence on girls' enrollment is tested. Second, the impact of the school factors on quality itself, measured by per-pupil expenditure, is also tested. For the former, results indicate that 34% of the variance in girls' enrollment are accounted for by school factors. The proximity of school to parents' area of residence (Distance), and per-pupil expenditure (P) are the most significant factors at the school level. The implication here too is that even when schools are provided, many girls miss the opportunity to enroll when they are too far off. Schools, in turn, are less in number and lack sufficient places for eligible children due to the absence of resources. The per pupil expenditure plays a crucial

role in the process and also interacts with family factors against girls' enrollment. As stated by some rural parents:

> at the beginning of the school year, a representative of the authorities comes here with a list of children to be recruited. Those who are called on are those who go to school. We are not the ones who decide. Most of the time it is a boy unless there is no boy in the family. Sometimes it can be girl but when she is too old for school, for instance 10 years old or more, we replace her by a boy if we can because the girl helps her mother at home.

Not only is it apparent here that there are not sufficient school places for all eligible children, but it is also clear that when authorities decide to go after them, parents do not always resist or resent sending their children to school.

Table 23

Determinants of Girls Enrollment

Household Factors		Supply of School Places		Support for Quality	
Vars in Eqtn	b cœffs Signifce	Vars in Eqtn	b cœffs Signifce	Vars in Eqtn	b cœffs Signifce
Parnt Educ (Educ)	.08621 (2.220) .0279*	school (sclpres)	-.13507 (-2.280) .0240*	Per pupl Exp.(P)	.01135 (7.360) .0001**
Total Inc (Totinc)	.00115 (2.708) .0076*	Perp exp (P)	.00403 (1.963) .0510*	Distance (Distce)	-.18283 (-2.930) .0039*
Forg-earngs (C_{FE})	-.00096 (-2.223) .0277*	Compul Ed (Sanctns)	-.00504 (-.086) .9317	Fem Teach (Tchrsex)	-.02896 (0.463) .6439
Fees paid by parents (C_F)	-.00038 (-3.030) .0029*	Fees paid by parents (C_F)	.000584 (4.838) .0001**		
		borrowing- (boro)	.00393 (.072) .943	Not for girls (Scqual)	-.01013 (-0.242) .8089

* $p \leq .05$. ** $p \leq .01$.

Factors Related to the Supply of School Places

It was also hypothesized in this study that besides parental and overall economic poverty, there had not been a sufficient political commitment to the issue of female schooling in Mali. The results of the analysis regarding the impact of the supply of places indicates that when the government provides less or no school in parents' areas of residence, and when the government directs little or no resources towards the education of children in those areas, girls' enrollment, is severely deterred. Parents' are poor and largely unaware of the importance of school for their daughters. Such a finding is meaningful, in that parents' attitude had long been the focus of attention since they are perceived as the main decision makers with regard to enrolling girls. Supply of places results indicate that the more schools and school places that are available, the higher girls' participation or the less schools, the fewer the participating girls. The picture in this data set is more like the latter in rural areas which either have no school or live too far from the existing ones.

Besides failure to make schools available where they are needed, the second major problem related to supply is that compulsory education is no longer enforced in Mali. While parents seem to be left to themselves, they are not offered alternatives such as opportunities to borrow money for their children's schooling. Parents in the studied samples unanimously agree that they do not feel compelled to school their children and have no opportunities to borrow funds for the schooling of their children. Both factors (compulsory education and borrowing opportunity) are substantively significant for participants unanimously agree on their no-existence. Some of those parents, however, state that they would not borrow money even if given the opportunity because they are too poor to pay back.

Factors Related to the Quality of School

Regarding supplying school quality, Chapter 3 hypothesizes that the more female teachers there are, the closer schools are to home, and the more resources are made available to school, the higher girls' enrollment is likely to be. Based on the results, there is an indication that the more resources and schools, the higher the number of girls participating while, and the further the schools are from homes, the lower girls' participation. It should be noticed that the expenditure factor adds a lot to the significance of school factors in the two stage least squares (2SLS) analysis. In the OLS results, in Chapter 5, it was shown that 11% of the variance in girls' enrollment were accounted for by school factors while 34% of the variance in their enrollment are accounted for by the same school factors in this analysis. Here too the availability of female teachers and parents' attitude regarding school for girls are not statistically significant but gained unanimous responses from parents. On the one hand, they all agree that there were no female teachers in their schools, which was a fact--especially in the rural areas--and on the other hand, they do not believe that girls do not need schooling .

Distance--It is also hypothesized that greater distance between school and home deters enrollment, especially in rural areas where there are fewer schools. At the primary level, with which we are concerned, in general, schools are available in each main division of the city the urban areas. Each school also has several classes at each grade level. In the city, the children living the furthest away from school will need to walk two kilometers (one way) each school day while in rural areas the closest could be 2 kilometers away from home with the exception of those who live in the villages housing a school.

When school quality is estimated through the amount of resources spent per child by the government in a given school, P, 4.6% of the variance in quality are

accounted for by the availability of school. The other two variables, the availability of female teachers and the importance of school for girls were not statistically significant. As on enrollment, the location of school negatively affects school quality. The more rural the school is the less attention it receives from authorities, and the less satisfactory its quality is to its users or potential users. As presented in the table above, the variance in per pupil expenditure depends on the availability of school, at least to some extent. An F value of 2.431, significant at .05 level is indicative of the significance of this factor. Inference can be made from this finding that the lack of schools reduce the chance of the government's spending on children in those areas deprived of schools. This in turn, prevents more girls and boys from having access to formal schooling.

Boys' Enrollment

Household Factors

Factors involved in determining household decisions to enroll their children seem to indicate more significance regarding boys' school enrollment than they do in girls' enrollment. While the results show that 48% of the variance in girls' enrollment are determined by household factors, they show that an even higher proportion of the variance in boys' enrollment, 54%, is determined by the same household factors, as indicated by the R^2. Contrary to girls' case where all the factors were significant, parents' education level was close to but not quite significant in boys' enrollment (see table 26). The fees parents pay for their enrolled children are more significant in boys' enrollment, (t = 4.525, p.0001) than they are in girls' (t= 3.030, p = .0029), while parents' income has a stronger effect on girls' enrollment than it does on boys'. The opportunity cost was estimated only for girls.

Factors Related to the Supply of Places

With regards the supply of places the ANOVA summary indicates that 42% of the variance in boys' enrollment appear to be explained by the supply of schools/places by the government with a significant F value of 21.292 (p = .0001). Here too the supply of places show a more significant effect on boys' enrollment than on girls' where the R^2 indicated 35%. As in girls' enrollment, per pupil expenditure and the availability of school(s) are the most significant factors. While the availability of school shows a slightly greater significance in girl's case, the per pupil expenditure is more significant in boys' enrollment. It can be inferred that since more boys are in school than girls, more is spent on them than it is on girls. Such a finding indicates that when the government builds schools in parents' areas of residence, and when the government makes resources available in those schools, even rural parents do send their sons to school.

School Quality

Just as with household and school supply factors, school quality factors also significantly affect boys' enrollment to a greater extent than girls'. The ANOVA output (see Table 24) includes an F value of 24.955 significant at .0001 level, and the R^2 indicates that 40% of the variance in boys' enrollment are attributable to school factors while R^2 was 34% in girls' enrollment. As in girls' enrollment, per pupil expenditure and the proximity of school to parents' area of residence were the most significant factors at the school level with respectively t= 8.495 (p = .0001) and t = -3.392 (p = .0009) as opposed to t = 7.360 (p = .0001) and t = -2.930 (p = .0039) for girls.

Table 24

Determinants of Boys' Enrollment

Household Factors		Gov't Supply of School		Gov't Support for Quality	
Vars in Equtn	b cœffs Significe	Vars in Equtn	b cœffs Significe	Vars in Equtn	b cœffs Significe
Parents' Educ. (Educ)	.06984 (1.861) .0648*	Availability of school (sclpres)	-.16831 (2.762) .0065*	Per pupil Expen (P)	.012805 (8.495) .0001**
Total Income (Totinc)	.00082 (1.986) .0488*	Per pupil exp (P)	.01214 (7.862) .0001**	Distance	-.20693 (-3.392) .0009**
Forgone earnings (C_{FE})	N/A	Fees paid by parents (C_F)	.00069 (6.165) .0001**	Fem teach.	.01851 (-0.303) .7625
Fees paid by parents (C_F)	-.00055 (4.525) .0001*	Compul. Ed (Sanctns)	-.03329 (-.611) .5424	Not for girls	N/A
		Borrowing (boro)	-.07375 (-1.445) .1505		

* $p \le .05$. ** $p \le .01$.

The differences between boys and girls regarding parents' education and fees may suggest that boys may have more chance to enroll than girls do, regardless of their parents' schooling and contribution. It is interesting however to notice that parents' income is a stronger determinant of girls' enrollment than it is of boys'. Such a result could be indicative that while income may not always determine whether a boy goes to school or not, girls' have more chance when their parents are better off. The supply of places further indicates that boys can be equally affected as girls, if not more, by the lack of political commitment to developing education, especially in rural areas as indicated in Chapter 5. Regarding school quality, boys' enrollment is similarly affected as girls in that the enrollment tends to increase

when the resources are made available while the enrollment tends to be low when school is too far from home (distance). In the literature on educational hindrances in developing countries, and in sub-Saharan Africa in particular, distance is the most widely discussed factor that affects both boys and girls in rural areas in particular.

Girls' Retention in School

Household Factors

Fifteen percent of girls' dropping out are accounted for household factors, as indicated by the $\underline{R}^2$. The ANOVA summary displays an $\underline{F}$ value of 6.412, significant at $\underline{p} = .0001$. This result also suggests that household factors influence girls' access to a greater extent than they influence their dropping out. In both OLS and 2SLS results, 37% and 48% of the variance in girls' enrollment were accounted for by household factors. Such is the case however only for the total sample. When broken down by urban and rural households in Chapter 5, 25% of the variance in urban girls' dropping out and 40% of the variance in rural girls' dropping out are accounted for by household factors, indicating that drop out rates are higher among rural girls. As can be seen in Table 25 below, four factors entered in this equation: the same equation 1 as in the enrollment tests was used. It appears that all the significance in the variance is attributable to the fees parents pay.

Table 25

Summary of Effects on Girls' Dropping Out

Household Factors,		Gov't Supply of School Places		Gov't Support for Quality	
Vars in Equtn	b cœffs Significe	Vars in Equtn	b cœffs Significe	Vars in Equtn	b cœffs Significe
Parents' Education Educ)	-.08227 (-.831) .4072	Availability of school (sclpres)	-.29131 (-2.030) .0441*	Per pupil Expenditure (P)	.00424 (1.186) .2374
Total Household Income (Totinc)	-.00177 (-1.630) .1053	Per pupil expn (P)	-.00823 (-1.669) .0973	Distance (Distce)	-.37269 (-2.576) .0110*
Forgone earnings (C_{FE})	.00179 (1.629) .1055	Compul Educ (Sanctns)	.06331 .0446* (.6565)	Fem teach (Tchrsex)	.06789 (.468) .6403
Fees paid by parents (C_F)	-.00111 (3.469) .0007**	Fees paid by parents (C_F)	.00114 (3.900) .0001**	School is useless for girls (Scqual)	.38704 (2.113) .0362*
		Borrowing opport (boro)	.07732 (.0582) .5617		

* $p \leq .05$. ** $p \leq .01$.

Factors Related to the Supply of Places

While 34% of the variance in girls' access to school are accounted for by the supply of places by the government, in the 2SLS analysis, 7% of the variance in their dropping out are explained by the same factors. As in the case of household factors, Government factors also seem to affect girls' access to school more than they affect retention. It can be inferred from here that though dropping out occurs, it may be accounted for by additional factors but it appears that if many more girls were given the opportunity to access school, their retention rates would be higher.

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

School Quality

School quality factors also play an important role in girls' dropping out/retention. Ten percent of the variance in girls' dropping out are explained by school factors. Proximity to school (t = -2.576, p = .0110) and parents' perception of the importance of school for girls (t = 2.113, p = .0362) are the most significant factors. Those suggest that the further the school is from people's areas of residence, the higher the dropping out of their daughters, (although in this particular data set this factor has been showing a negative sign that the researcher interprets as being caused by the fact that throughout the data parents who live too far from school have very few if any children in school. On the other hand, parents' perception of the use of school for girls shows that more negative parents' attitude towards female schooling, the higher girls' dropping out. dropping out of girls.

Boys' Retention in School

Household Factors

Six percent of boy's retention are explained by household factors, against 14% in the case of girls' retention. This suggest that girls' retention in school is affected by household factors more than boys' retention is. This is an interesting difference since boys' enrollment was more significantly affected by all three categories of variables. Furthermore, while such is the case for household factors, Government Supply factors (supply-1) and school quality factors (supply-2) show no significance as regards boys' dropping out (see Table 26 below) while they respectively account for 7% and 10% of girls' dropping out. This leads to say that supply factors affect girls more than they affect boys in terms of staying in school and that the causes for boys' dropping out may reside in other factors not studies here.

Table 26

Determinants of Boys' Dropping Out

Household Factors		Gov't Supply of School Places		Gov't Support for Quality	
Vars in Equtn	b cœffs Significe	Vars in Equtn	b cœffs Significe	Vars in Equtn	b cœffs Significe
Parents' Educ. (Educ)	-1.285 (.2007)	School Avail (sclpres)	.519 (.6043)	Per pupil Exp (P)	.759 (.4493)
Household Income (Totinc)	-1.004 (.3172)	Per pupl exp (P)	1.019 (.3098)	Schl far from our houses (Distce)	.407 (.6844)
		Fees paid by parents (C_F)	.000723 (2.447) .0156*	Fem teach (Tchrsex)	-.249 (8040)
Forg earngs (C_{FE})	N/A	Compul Educ (Sanctns)	.798 (.4261)	School is useless for girls (Scqual)	N/A
Fees paid by parents (C_F)	-.00094 (-2.951) .0037*	Borrow opp. (boro)	-.898 (.3708)		

*$p \leq .05$

Policy Factors on Girls' and Boys' Enrollment and Dropping Out

Policy Versus Girls' and Boys' Enrollment

Like all the other significant factors, policy factors that are significant in girls' and boys' enrollment are more significant for boys than they are for girls. As can be seen in Table 27 below, when taken alone, policy factors account for a lot in parents' demand for school for their daughters and sons. The ANOVA summary shows that 35% of the variance in girls' enrollment and 38% of the variance in boys' enrollment are accounted for by policy factors. It should be made clear that two main policy factors seem to account for all the variance: the per pupil expenditure

by the government and the availability of school. In both the OLS and the 2SLS analyses, these two factors have been consistently significant.

Table 27

Summary of Effects of Policy on Girls' and Boys' Enrollment

Policy Factors	Girls' Enrollment		Boys' Enrollment	
List of Variables in Equation	b cœfficient t Statistics	Significance level p:	b cœfficient t Statistics	Significance level p:
Per pupil Expenditure (P)	.01109 (7.008)	.0001	.01124 (7.361)	.0001
Availability of school (sclpres)	-.16277 (-2.523)	.0126	-.19758 (-3.237)	.0015
Gov't Investmt (govhelp)	(-1.411)	.1603	-1.307	.1950
Comp. Educ (sanctns)	-.449	.6538	-1.177	.2410
Borrowg Opp (boro)	.670	.5038	-.266	.7904
Fem teach (Tchrsex)	-.084	.9333	1.043	.2985
Schl for girls (scqual)	-.487	.6269	N/A	N/A

* p≤.05. ** p ≤.01.

Although the other policy variables were not statistically significant, they are substantively significant. Rural parents were unanimous on the fact that there were no government efforts going on in their area and that might change their attitudes. Both rural and urban parents totally agree that compulsory education is no longer enforced (see Chapter 5). In terms of opportunities to borrow money for purposes of sending children and particularly girls to school, parents invariably agree that they have no such opportunities while they can do so for farming and can renew loans if they successfully reimburse the first ones. Regarding female teachers, there were very few of them in some urban schools, and none in the rural schools. It was interesting to hear most rural parents voice preference for male teacher despite the

[illegible]

[illegible]

[illegible]

belief that some of them abuse girls. They tended to believe that males are better teachers, a manifestation of traditional gender stereotypes found in many West African countries.

Policy Versus Girls' and Boys' Dropping Out

Policy factors alone show no significance regarding boys' dropping out while they seem to account for 10% of the variation in girls' dropping out. The lack of schools in rural areas, and lack of belief, among parents, in the importance of school for girls are the most significant factors with respective ts of -2.531 (p = 0124), and 2.073 (p = .0398). There was no significance of any of these factors is associated with boys' dropping out.

Table 28

Summary of Effects of Policy on Girls' and Boys' Dropping Out

Policy Factors	Girls' Dropping Out		Boys' Dropping Out	
List of Variables in Equation	b coefficient t Statistics	Significance level p:	b coefficient t Statistics	Significance level p:
Per pupil Expenditure (P)	.00408 (1.139)	.2564	.656	.5125
Availability of school (sclpres)	-.37187 (2.531)	.0124	.260	.7949
Gov't Investmt (govhelp)	-.03113 (-.152)	.8793	-.150	.8812
Comp. Educ (sanctns)	.01400 (.100)	.9205	.816	.4158
Borrowg Opp (boro)	.11523 (.869)	.3860	-.900	.3694
Fem teach (Tchrsex)	.10663 (.746)	.4570	-.203	.8391
Schl for girls (scqual)	.37718 (2.073)	0398	N/A	N/A

As shown in Table 28, while the availability of school and parents' perception of the quality of school seem to be the main policy factor affecting girls' dropping out, none of the policy factors accounts for boys' dropping out. Contrary to girls whose dropping out is accounted for, at least to some extent, by demand, supply as well as policy factors, it consistently appears that once boys' enroll, factors other than those factors might contribute to their dropping out.

Summary

This chapter has presented and discussed results of simultaneous estimations of the behaviors of three categories of factors: household, supply/policy, and school, and how they affect enrollment and dropping out among girls and boys. Household factors and school factors seem to account for most of girls' enrollment problems. Among those the most significant household factors are parents' schooling, their income, the forgone earnings involved in sending girls to school, the resources they spend on school supplies when children attend school. On the supply side, the availability of school and the resources spent per child for school are the most determining factors. On the school side, the proximity of school to areas of residence is the most statistically significant factor. Other factors such as the availability of female teachers and the importance of schooling for girls were rather substantively significant since parents unanimously agree that the first was absent and that they believed school was important for their daughters as well.

The various results indicate that some factors account for boys' enrollment more than for girls or vice versa, while all the significant factors, in terms of dropping out, account for girls' dropping out but not at all for boys'. Though boys enroll in higher proportions, some results indicate that if given the opportunity, more girls will enroll and more will stay in school rather than drop out.

CHAPTER 7

CONCLUSIONS AND RECOMMENDATIONS

Overview of the Study

This research examined the factors that affect girls' access to and retention (retention defined here as persisting or not dropping out) in school as opposed to boys in Mali. The study sought to identify the most significant factors and those that can be affected by policy. The literature review identified three main categories of factors found to affect female schooling in developing countries: demand factors, supply factors, and school quality factors.

A specific model was developed and adapted to the situation in Mali. It consisted of: equation 1, Demand; equation 2, Supply of Places (quantity); and equation 3, Supply of quality/treatment. The jointly dependent variables are girls' enrollment demand and their dropping out. Factors determining families' demand decision were considered as both independent and intervening variables for they are affected by a number of policy factors, and then they affect girls' enrollment and retention in school. Government policies affecting the supply of school places (Qs1), and school factors affecting the quality and the distribution process of education (Qs2), were the additional independent variables considered as exogenous variables in this study.

The study is considered significant in that it is the only scientifically conducted effort to date, geared toward the analysis of girls' schooling in Mali. It is also unique since, contrary to the existing studies, it sought to empirically control for all of the major determinants so that each can be put in perspective. Furthermore, this study developed a research instrument that can be built on in other similar studies in developing countries. Finally, while the policy side is usually overlooked in the

existing literature, this study took policy factors into account, bringing out one of the most important factors that affect female schooling.

Data were mainly collected by survey which included both direct interviews and questionnaire administration to stratified random samples. A total sample of 724 participants were contacted including 301 parents. The data analysis includes some descriptive statistics and mostly multiple regression analyses in both ordinary and three stage least squares. A test of collinearity was also performed to verify the degree to which independent variables are not highly correlated. The results of such test were negligible. All the analyses were performed using Statistical Analysis System (SAS) on the mainframe of the campus of the university of Illinois.

While findings support some of the literature, for instance that distance is a problem, part of the results show that some previously identified determinants such as parents religion are not as strong as suspected. The belief that most parents in developing countries just refuse to depart from their religious, cultural and traditional values by educating girls is therefore not entirely true. Based on this study's findings, it rather a fact now when given the opportunity through resources and information, most parents would send their daughters to school. Parents are generally unschooled themselves, and live in areas without schools, or so far from school that they fear for the safety of their daughters. Additionally, parents are so poor they cannot afford the double loss involved in sending a daughter to school: first the opportunity costs incurred by sending to school their "manpower", second, letting the daughters go to school entails supplying them with some basic school supplies which can be very costly by their standards. Despite such conditions, the type of government assistance that could free girls up from home labor is nonexistent in most rural areas, making the schooling of the girls-child a very hard decision for parents to make.

Conclusions

What Went Wrong With Mali's Educational Policy?

Although the stated educational policy of 1961 seems to seek better education for girls and not just boys, the record does not show that any progress has been made since independence. The evidence indicates that there has not been sufficient commitment to the execution of that policy, and that no particular effort had been deployed to make girls' participation an issue.

Based on Coombs' (1980) descriptions of forms of noncompliance with policy, discussed in the literature review section, and based on descriptions of certain barriers to girls' education such as demand and supply factors (discussed in literature review, and tested later) it can be implied that there have been at least two types of noncompliance interpreted below. Resource-based noncompliance reinforced by policy-based noncompliance reflect parents' attitudes the most.

Resource-Based noncompliance--The findings in this study indicate that the lack of resources is one of the key factors. Resources are scarce at the household level, making it impossible for parents to either pay for their children's school fees or to do without their daughters' help at home. This is compounded, on the supply side, by the lack of government investment in rural areas, hence the absence of technology; the lack of schools; and the low per pupil expenditure in the existing rural schools, and the absence of female teachers in rural areas. It can be said, therefore, that the target group, parents, may have understood the goal of compulsory education and what the policy demands of them but lacked the wherewithal to comply with it. The dictates of the policy required unavailable resources and costly sacrifices, time, and energy. To remedy such an attitude, policy researchers need to find out what the real causes of the noncompliance are but no efforts are likely to succeed without more resources

Policy-Based noncompliance--The results of the study indicate that parents, rural ones in particular, have developed a certain distrust regarding school as a result of its consequences for their daughters in particular. For instance, while most of their children drop out, some girls are abused by their instructors or by other men who get access to them through school. Additionally, some boys are "enslaved" by their instructors for whom they are made to work in the fields. Worse, such rural parents deplore that there are no role models in their villages to show the benefits of schooling while their daughters who drop out flee to the big city to escape marriage to a farmer in the village.

Because of the undesirable consequences of school, therefore, many parents neither support sending their children to school--especially when they do not have schools where they live--nor do they believe that schooling their children through the available strategy will change their lives. If the government wishes to achieve greater school participation in rural areas, it needs to bring new evidence and expertise besides resources in order to both convince and assist parents.

Summary of Main Findings

1. Nine household factors: (distance between home and school, parents' level of schooling, parents' total income, parents' strategy to keep daughters home, opportunity cost, number of children in the family, parents' concern for daughters' safety, the influence of parents' culture, and the influence of religion) were tested. While parents' schooling, their strategy, and their total income are the most significant determinant overall, strategy, income, and safety concern are the most significant factors in urban areas while distance away from school, parents' schooling, and cultural influence are the most important ones in rural areas. This study contradicts the commonly held view that Islam constitutes an important

barrier to female schooling. This may only be true in certain Muslim countries, not all of them. It is also less true where there is no school or teacher available.

As far as girls' retention is concerned, while parents' schooling, the number of children they have, and their concern for daughters' safety are the determining factors in urban areas, distance away from school, income, and the number of children are the most significant factors. While teen pregnancy can occur everywhere, it is more common in the city. The number of children in the household however can be a handicap in both areas given that the more of them there are, the heavier the burden of school supplies and the bigger the risks involved for daughters.

2. Four factors measured the supply side: government's efforts to encourage parents, the enforcement of compulsory education policy, the availability to parents of opportunities to borrow money, and the availability of schools. Tested all together, the supply factors were significant. Government provision of schools and its enforcement of compulsory education policy are the most important determining factors. They both show significant negative influence meaning the higher the perception that they do not exist, the lower the female access to school. Data in this study indicate that compulsory education law is not enforced and that parents feel no obligation to school their children. "We used to pay teachers in order to keep our children out of school, now we have to pay when we need them to stay in school" said some rural parents. This suggests that they used to be compelled and had to bribe someone but now they are interested in schooling their children but cannot for lack of opportunity.

If Mali's 1962 educational policy was meant to change parents' behavior regarding their daughters' education, it can be said that it has not been successful. Today, most Malian parents do not feel that they are compelled to send their

children to school, nor do many believe that the positive outcomes for their daughters outweigh the negative ones (because they are not informed).

Broken down by urban and rural, supply factors were significant only in rural areas, showing that girls' access to school in rural Mali is affected by the lack of government investment and the absence of school in parents' area of residence. Regarding girls' retention, the supply factors were not significant in urban areas while in rural areas they show that the absence of school is the main reason why those who enroll drop out.

3. Three factors were used to measure the impact of school quality on girls' access and retention: parents' preference of a female teacher for their daughters, parents' belief in the quality of school for their daughters, and whether the proximity of school was important. Overall, while proximity seems to be the main influencing factor for girls' access, both proximity and parents' belief in the quality of schooling for daughters are significant determinants of girls' retention. In both urban and rural areas proximity is the most important factor. It shows a negative impact on access and on retention, meaning that the higher parents' perception that is a problem, the lower their daughters enrollment while dropout is low because access is almost non existent--reason why the sign is negative with retention.

While the focus of this study was girls, data show that in most rural areas, boys also suffer from lack of schooling as much as girls. Drastic measures must be taken, to achieve equitable school participation of boys and girls in Mali. Not only do serious measures need to be taken, there also has to be a strong commitment to enforcing them entirely and, more importantly, to investing in rural areas so as to help parents in their endeavor. Unless such a double sided effort is undertaken, commitment to the issue accompanied by enforcement or rules, plus resource supply, schooling all eligible girls in Mali will remain a utopia.

Recommendations

Given the low enrollment rates overall, and among girls in particular, and given that both teachers and parents agree that compulsory education is no longer enforced in Mali, one of the government's first moves to improve female school participation in Mali must be the redefinition of compulsory education policy and its enforcement all over the country. Sanctions and rewards must be defined and they must be carried out in order to convince parents of the government's commitment to the issue.

Funds need to be secured and their use towards greater female schooling needs to be monitored--Per pupil expenditure and the fees parents pay are two of the most significant factors in this study. Parents are poor, so is the government, but some parts of a country cannot be left out entirely. Poverty or lack of resources is the first problem that prevails at all levels and that needs to be addressed. In their interviews, representatives of the Association of Students' Parents expressed concern over the fact that the regional and local development tax (TDRL) that all parents contribute is rather diverted to solve other regional problems instead of being invested in local schools. There need to be more of those funds invested in rural schools which need it the most, and more development related activities in those deprived rural areas so that they can retain teachers and attract some time-saving technology helpful to families. Thus, quicker and less labor intensive solutions will be found to rural people's problems.

More efforts should be directed toward the creation of schooling opportunities--More schools and school places are needed in rural areas. Such an endeavor will reduce girls' moving away from their families as well as many types of abuses they undergo while away. When it becomes necessary to move to another area for further schooling--which worries parents and causes many girls to quit--there must

be some way of subsidizing housing, food and transportation for such children through the school headmaster, the inspector and the regional director.

A more encouraging environment should be build for girls--Quickly address the absence of female teachers in rural areas, by selecting girls among rural girls who have reached ninth grade. Those can be trained to teach in their villages and serve as role models as well. Such efforts can be maintained on a number of years, offering those instructors salaries proportionate to their level, and training new ones while the first ones can be given a chance to pursue further training if so desired.

Girls need to be protected--There need to be clearly stated laws, that teachers, parents (all parents) as well as students know about) addressing girls' safety. Many times teen-age girls are pregnant either by a teacher or a male student. Such laws must also set new guidelines for teachers' and male peers' conduct that properly address parents' cultural expectations to the extent that it is possible. Not all cultural expectations can be satisfied since school is more likely to teach girls how to be assertive rather than submissive. If the school director is a man, he should be married and aware of his role and the importance of his conduct in the village.

Design new need-based curriculum or radically modify the existing one--

According to Smock (1981), undirected expansion is not a panacea for redressing gender differences. The existing curriculum needs to be changed for two major reasons: first in order to reduce, if not eliminate, gender bias which is found by other studies to affect girls. Second, given the unlikelihood that most girls will reach or go beyond sixth grade, making the curriculum content more practical/vocation oriented in particular rural schools as part of a rural development program for instance, may help them make more out of what they learn.

It should be pointed out that the above recommendation has already proven feasible even prior to finishing this study. In 1994, during a school visit trip in Mali, I found out that Save the Children (USA), has designed some 3-year rural schools in a few Malian villages where the schools are mainly supported by villagers themselves. The intent of this project is to teach children who would otherwise not attend any formal school, reading writing and arithmetic, using their local language and teachers trained locally--never schooled or early drop-outs. The classroom included equal numbers of boys and girls. The villagers seemed to be very enthusiastic about the project and support the effort, letting both boys and girls attend since the courses are organized in such a way that they allow the children time to help their parents at home. Parents decided upon paying for a uniform for the kids, and they were so happy they also increased their contribution to teachers' salaries. The teachers are also satisfied since they would normally have no income while they now earn a salary and have time in the summer to work in their fields.

Another problem that needs quick attention and relates to the curriculum issue is that of language of instruction. Children, especially in rural schools, have hard time understanding what is said in class whereas saying it in their language will make the understanding much faster and reduce the frustration and discomfort that are undoubtedly among the causes of many early drop-outs.

Need for Further Research

While this study has focused on the household and policy level, girls' experience in the classroom remain to be explored. Research needs to be conducted inside the classroom in order to find out if gender bias exists inside the classroom in Mali, and to what extent it affects girls.

Per-pupil expenditure in Mali is one global figure which does not reflect the reality in this country. It will be useful for future studies to find more accurate

figures for per pupil expenditure, and, in particular, the disparities between urban and rural areas.

Research to find accurate figures for the opportunity cost in figures, as well as measuring what parents spend of their children will be important contributions. Both rural and urban parents seem to underestimate what they spend on a given child per school year. Although school is free, parents pay for school supplies and many other needs caused by school participation.

Finally, In Mali and all developing countries like it, given the poverty level and the tiny proportion of the population receiving education, it is clear that formal schooling for all will remain a utopia for a long time to come. Research needs to be conducted on what alternative short term educational strategies work better for deprived rural areas where people would normally have no form of formal education.

REFERENCES

Alexander, K. (1982). Concepts of equity. In W. W. McMahon, & T. Geske (Eds.), Financing education: Overcoming inefficiency and inequity (pp. 193-214). Urbana: University of Illinois Press.

Anderson, M. B. (1988). Improving access to schooling in the Third World: An overview. (Bridges Research Report Series). Cambridge, MA: Harvard University.

Bellew, R., & King, E. M. (1991). Promoting girls' and women's education: Lessons from the past (PHREE Working Paper No 715). Washington, DC: The World Bank.

Beneria, L. (1979). Reproduction, production and the sexual division of labor. Cambridge Journal of Economics, 3, 203-225.

Bowman, M. J. & Anderson, C. A. (1980). The participation of women in education in the Third World. Comparative Education Review, 24(2), 13-32.

Bridsal, N. & Cochrane, S. H. (1988) . Education and parental decision making: A two-generation approach. In L. Anderson & D. M. Windham (Eds.), Education and development: Issues in the analysis and planning of post-colonial societies (pp. 175-210). Lexington, MA: D. C. Heath and Company.

Brown, C., Jatoi, H. & Rawley, C. (1990). Educational Policy Simulation EPICS: Investing in basic education for development. A decision-making model to improve access to schooling: Coordinator's Manual [computer simulation]. Cambridge, MA: Harvard University.

Carroll, T. F. (1983). Women, religion, and development in the Third World. New York: Praeger.

Chlebowska, K. (1990). Literacy for rural women in the Third World. Paris: UNESCO.

Cloud, K. (1986). Sex roles in food production and distribution systems in the Sahel. In Lucy Creevey (Ed.), Women farmers in Africa: Rural development in Mali and the Sahel. New York: Syracuse University Press.

Cochrane, S. H., Leslie, J., & O'Hara, D. J. (1980). Parental education and child health: Intracountry evidence (World Bank Staff Working Papers. No. 403-405). Washington, DC: The World Bank.

Cooksey, B. & Blakemore, K. (1982). A sociology of education for Africa. London: George Allan University.

Cochrane, S. H. (1984). Estimating the effects of education on well-being and the integration of women in development. (WID Working Paper). Joint Harvard/MIT Group, Cambridge, MA.

Coombs, F. S. (1980). The bases of noncompliance with a policy. Policy Studies Journal, 8(6), 885-892.

Coumaré, F. (1986). Higher education in Mali: Mission, organization, problems, challenges, and dilemmas. Bamako, Mali: Ministry of National Education.

Craig, J. E. (1981). The expansion of education, Review of Research in Education, 9(4), 151-213.

Craig, J. E. (1987). Implementing educational policies in Sub-Saharan Africa: A review of the literature. Washington DC: The World Bank.

Danielle, B. T. (1971). Femmes du Mali: Evolution du statut et de l'image de la femme dans la société malienne [Malian women: Evolution of the status and image of women in the Malian society]. Paris: Université de Sorbonne.

Elliott, C. M., & Kelly, G. P. (1980). Introduction: Perspectives on the education of women in Third World nations. Comparative Education Review, 24(2), 1-12.

Guthrie, J. W. & Reed, R. J. (1986). Educational administration and policy: Effective leadership for American education. Englewood Cliffs, NJ: Printice-Hall, Inc.

Hough, J. R. (1989). Inefficiency in education: The case of Mali. Comparative Education, 25(1), 77-85.

Hurn, C. J. (1985). The limits and possibilities of schooling: An introduction to the sociology of education (2nd ed.). Boston, MA: Allyn and Bacon Inc.

Hyde, K. (1989). Improving women's educationa in Sub-Saharan Africa: A review of the literature (PHREE Background Paper Series No 89/15). Washington DC: The World Bank.

Jones, T. M. (1980). Education of girls in Tunisia: Policy implications of the drive for universal enrollment. Comparative Education Review, 24(2), 106-123.

Kelly, G. P. (1984). Excellence, reform, and equity: An international perspective. Ontario, Canada: Comparative Education Center.

Kelly, G. P, & Elliott, C. M. (Eds.). (1982). Women's education in the Third World: Comparative perspectives. Albany: State University of New York Press.

King, E., & Lillard, L. (1983). Determinants of schooling, attainment and enrollment rates in the Philippines. Santa Monica, CA: The Rand Corporation.

King E. M., & Hill, A. M. (Eds.). (1991). Women's education in developing countries: Barriers, benefits and policy (Document No PHREE/91/40). Washington, DC: The World Bank.

Knight, J. B., & Sabot, R. H. (1990). Education, productivity, and inequality: The East African natural experiment. New York: Oxford University Press.

Lembert, M. (1985). The impacts of mothers' beliefs, expectations, and attributions on children's primary school dropout: A study of low socioeconomic status families in urban Mexico. Unpublished doctoral dissertation, Stanford University, School of Education, Stanford, CA.

Le Vine, R. (1980). Influences of women's schooling on maternal behavior in the Third World. Comparative Education Review, 24(2), 78-105.

Le Vine, R. (1987). Women's schooling, patterns of fertility and child survival. Educational Researcher, 16(9), 21-27.

Lockheed, M., E., A. M. Vespoor, D. Bloch, P. Englebert, B. Fuller, E. King, J. Middleton, V. Paqueo, A. Rodd, R. Romain, and M. Welmond. (1990). Improving primary education in Developing Countries: A review of policy options. Washington, DC: The World Bank.

Maïga, A. (1989). The higher education dilemma in Mali: How authorities conciliate insufficiency of qualified manpower, higher education graduate surpluses, and increasing unemployment trends. Unpublished master's thesis, College of Education, University of Illinois, Urbana.

Mazmanian, D. & Sabatier, P. (Eds.). (1981). The implementation of public policy: A framework of analysis. In Effective policy implementation (pp. 3-99). Lexington, MA: D. C. Heath and Company.

McMahon, W. W. (1990). Why families invest in education. In Economics of education, health and human capital (pp. 182-197). Course Reading Packet, Fall 1990, University of Illinois.

McMahon, W. W. & Geske, T. (1982). Financing education: Overcoming inefficiency and inequity. Urbana: University of Illinois Press.

McSweeney, B. G. & Freedman, M. (1980). Lack of time as an obstacle to women's education: The case of Upper Volta. Comparative Education Review, 24(2), 124-139.

Ministère de l'Education Nationale. (1981). L'education au Mali: Problèmes, perspectives et prioritiés. Mali and UNESCO. Bamako, Mali: Author.

Ministère de l'Education Nationale, IPN. (1992). Rapport de suivi et d'évaluation du IVème projet. Bamako, Mali: Projet ABEL.

National Commission on Excellence in Education. (1983). A nation at risk: The imperative of education reform. Washington, DC: Author.

Odden, A. & Odden, E. (1984). Education, reform, school improvement, and state policy. Educational Leadership, 42(9), 13-19.

Organisation Internationale du Travail. (1982). Dispariés de revenus entre les villes et les campagnes au Mali (Rapport du PECTA). Addis Abeba, Ethiopie: Bureau International du Travail.

Pedhazur, E. J. (1982). Multiple regression in behavioral research (2nd ed.). New York: Holt, Rinehart and Winston, Inc.

Pressman, J., & Waildavsky, A. (1973). Implementation. Berkeley: University of California Press.

Psacharopoulos, G., & woodhall, M. (1985). Education for development: An analysis of investment choices. New York: Oxford University.

Psacharopoulos, G. (Ed.). (1987). Economics of education: Research and Studies. New York: Pergamon Books Ltd.

Quade, E. S. (1989). Analysis for public decisions (rev. ed.). New York: North-Holland.

Schiefelbein, E., & Farrell, J. (1980). Women, schooling, and work in Chile: Evidence from a longitudinal study. Comparative Education Review, 24(2), 160-179.

Sergiovanni, T. Burlingame, M., Coombs, F. S., & Thurston, P. W. (1987). Educational governance and administration. Englewood Cliffs, NJ: Printice-Hall, Inc.

Shields, N. G. (1987). Female labor and education. In George Psacharopoulos (Ed.), Economics of education: Research and studies (pp. 121-128). New York: Pergamon Books Ltd.

Simmons, J. (1980). The education dilemma: Policy issues for the developing countries in the 1980's. Oxford, NY: Pergamon Press.

Sivard, R. L. (1985). Women: A world survey. Washington, DC: World Priorities.

Smock, A. C. (1981). Women's education in developing countries: Opportunities and outcomes. New York: Praeger.

Stromquist, N. (1987). School-related determinants of female primary school participation and achievement in developing countries: An annotated

bibliography (EDT Discussion Paper, education and training series. Report No. 83). Washington, DC: The World Bank.

Taylor, A. (1984). Insights into African education, The Karl W. Bigelow memorial lectures. New York: Columbia University, Teachers' College Press.

UNDP. (1991). Human development report. New York: Oxford University Press.

UNESCO. (1981). Planning education for reducing inequalities (IIEP Seminar). Paris: The UNESCO Press.

Woodhall, M. (1973). Investment in women: A reappraisal of the concept of human capital. International Review of Education, 19(1), 9-29.

World Bank. (1980). World Development Report. (Part II: Poverty and human development). New York: Oxford University Press.

World Bank. (1987). Sub-Saharan Africa: From crisis to sustainable growth (World Bank Policy Studies). Washington, DC: Author.

World Bank. (1988). Education in Sub-Saharan Africa: Policies for adjustment, revitalization, and expansion (A World Bank Policy Study). Washington, DC: Author.

APPENDIX A

PARENTS' SURVEY INSTRUMENT

	my home	1__	2___	3__	4__	5__	6___
						DISTPROB	
4	The fact that my friends got pregnant	1__	2___	3__	4__	5__	6___
5	Having a man as an instructor	1__	2___	3__	4__	5__	6___
						TCHREX	
6	Knowing that male teachers abuse big girls	1__	2___	3__	4__	5__	6___
						TCHRABUS	
7	The assistance I receive from my male peers	1__	2___	3__	4__	5__	6___
8	The fact that I can find food at school	1__	2___	3__	4__	5__	6___
9	My personal determination to study	1__	2___	3__	4__	5__	6___
10	Other	1__	2___	3__	4__	5__	6___

(if other, please specify)____

24 What discourages you about school among the following?

Lack of latrines at school [ ] 1
Lack of latrines at school for girls [ ] 2
Absence of books [ ] 3
Absence of tables and chairs in class [ ] 4
Other [ ] 5
(if other, please specify)____________________________________

*25 How many children do you plan to have?____________ FUTKIDS

*26 Do you think it will be hard for you to be a mother and worker at the same time?
WKEXPT [

Not at all [ ]1
A little hard [ ]2
Very hard [ ]3
I do not think so [ ]4
Other [ ]5
If other, please specify____________________________________

*27 What aspect of education is the most interesting to you? TYPOFED
Gaining access to interesting professions [ ]1
Acquiring financial independence [ ]2
Abillity to have fewer children [ ]3
Greater openmindedness [ ]4
Multiple skills besides salary [ ]5
Other [ ]6
If other, please specify______________________________________

*28 What kind of schooling (training) do you think girls ought to receive? (in what fields, and for what reasons)? FEMEDUC

____
____
____
____

29 What is your preferred future career? FUTCAR

Housewife	[ ] 1
Midwife/nurse	[ ] 2
Teacher	[ ] 3
economist	[ ] 4
Doctor	[ ] 5
Secretary	[ ] 6
Dancer in a bar/a disco	[ ] 7
Other	[ ]8

(If other, please specify) ______________________________

30 Why is this your choice?__________________________________

APPENDIX D

DECISION MAKERS' SURVEY INSTRUMENT

Marital Status:

Single	[ ] 1
Married	[ ] 2
Divorced	[ ] 3
Separated	[ ] 4
Widowed	[ ] 5

Ethnic group:

Bambara	[ ] 1
Bella/Tamashek	[ ] 2
Bobo	[ ] 3
Bozo/Somono	[ ] 4
Dogon	[ ] 5
Kassonke	[ ] 6
Maure	[ ] 7
Mossi	[ ] 8
Peuhl	[ ] 9
Senoufo	[ ] 10
Soninke/Sarakole	[ ] 11
Sonrai	[ ] 12
Other	[ ] 13

(If other, Please specify) ______________________________

The category the respondent falls in

Decision maker

a Officials	[ ] 1
b Parents	[ ] 2
c Religious groups	[ ] 3
d Women representatives	[ ] 4

Implementers

e Teachers	[ ] 1
f School administrators	[ ] 2

Beneficiaries

g Current students	[ ] 1
h Graduates/dropouts	[ ] 2

Editor: ____ Date: ____________

1 Do you think the first leaders here were committed to promoting female schooling in this country? If so, do think they deployed enough efforts to succeedfor instance efforts to convince parents about the usefulness of female education?

2 Do you believe the Malian society and public are now better prepared to support female schooling policies?

3 What do you think were the socioeconomic, cultural and religious conditions which hampered a greater girls' participation in school in Mali since 1962?

4 Do you think the same kind of conditions are again likely to play agains the current efforts to promote greater female school participation?

5 Do you know if there are clearly set objectives to be reached as far as female schooling is concerned? If so, what are they?

6 Are there reliable resources available to reach those objectives? If so, what are they?

7 Do you think that people here have reached a level where they started establishing a cause/effect theory between female education and the development of this country?

8 Who are the implementing agents and how responsible will they be for the success of the implementation process?

9 What are the guidelines and sanctions set for the implementation process and how will they be enforced?

10 What do you think could be the consequencesintended as well as unintendedof the current policies regarding girls' schooling and how will you address them?

11 This country now has an independent press which seem to be interested in social problems among others. Do you think they will play a positive role in the efforts to increase girls' school participation and change parents' attitude?

12 If yes, could you elaborate on how that might happen?

13 Do you feel that the Malian populations are more open to female schooling today than they were thirty years ago? Why?

14 If the present government is seriously committed to promoting greater female school participation in Mali, how far do you feel it will go to change parents' attitude while at the same time guarranteeing them the protection of the values they do not want their children to lose? What will the government do with those who do not comply?

15 How will the current efforts be evaluated in order to guarrantee them a certain continuity and success?

16 In a clear way, could you describe what your longterm palns are regarding girls' schooling in Mali? Knowing that some of the problems experienced today resulted from the 1962 reform and/or the way it was implemented, what is being done to prevent the same kind of problems from occurring again?

17 It is often said that the curriculum in countries like Mali is irrelevant or biased, will the current school curriculum undergo any chages in order to make it more practical and more beneficial?

----

18 If you were to evaluate the first two republics on their performance on issues of girls' schooling, what would your impressions be?

----

19 Final comments /recommandations?

VITA

Aminata M. Soumaré, Ph.D.

Career Objective

Interested in Teaching and research related to policy studies/making, policy analysis, comparative education, educational development and equity, also issues of female education and gender roles in international development.

Education

1994	Ph. D. University of Illinois. Major: Educational Policy Analysis. Minor: Gender Roles in International Development -Thesis Director: Walter W. McMahon, Economics/Education.
1989	Master's Degree, University of Illinois at Champaign-Urbana, Educational Policy Studies
1984	B.A., Ecole Normale Supérieure (Mali)
1977	Lycée Notre Dame du Niger, Baccalauréat Malien, Deuxième partie (Mali)
1976	Lycée Notre Dame du Niger, Baccalauréat Malien, Première partie (Mali)
1974	D. E. F. (diplôme d'études fondamentales) Second Cycle fondamental de Goundam

Teaching Experience

1989-1992	**Teaching assistant** at the Center for African Studies, University of Illinois.
1984-1986	10-12 grade **English instructor** in Mali: first at the Vocational School: Centre de Formation Professionnelle (CFP), then at Lycée Régional de Ségou (general education)
1982-1983	Summer **Language instructor** for **Peace Corps**: (Bambara and French to new volunteers in Bamako, Mali)

Research experience

1993-1994	Research Assistant: thesis format chekcer for the college of education at the University of Illinois:checking format agreement and sometimes editing as well.
1992-1993	Four month-Ph.D. thesis data collection in Mali, supported by **the Academy for Educational Development/USAID**. Topic: factors that affect girls' access to and retention in school in developing countries/focus on Mali.
Sum. 1993	Research assistant, Educational Policy Studies, University of Illinois.
1990	Spring research assistant. Responsibility: randomly selecting subjects for nation-wide study, sending questionnaires out, receiving them back, and analyzing and interpreting data, for Dr. Robert E. Stake, Univ. of Illinois.
1989-1991	Research assistant at the Center for Instructional Research and Curriculum Evaluation with Dr. Robert E. Stake, (CIRCE), Univ. of Illinois.

1988 Designed and conducted **thesis data collection** in Mali, June-August for Master's thesis. Topic: Higher Education and Graduate Unemployment in Mali

Consulting-Commissioned reports

1994 Four month **field director for a World Bank study** in Guinea: **participated in designing and implementing training, collected data, supervised research assistants, and coordinated other activities, then wrote part of report.**

1993 Commissioned report for **Creative Associates** International-**USAID**/AED on Factors the Affect Girls' Access to and Retention in School in Mali.

1992 Interviewed by VOA on a comparison of education for Blacks in the United Stated versus Education in African countries.

1991 Interviewed by VOA on female schooling in Mali and in developing countries in general

1990 **Consultant**, Member of **MUCIA team** which assessed **feasibility of a projected University** in Mali **for the African Development Bank.** Responsibilities included: selecting subjects, **gathering and analyzing** information, **writing a report**, and **making recommendations** to the **Ministry of Education.**

Computer Skills and Experience

Likes computers and has strong familiarity with, and mastery of various word and data Processing softwares on both IBM and Macintosh (Word Perfect, M S Word; **SAS** (Statistical Analysis System), **LOTUS** , **Microsoft Excel, SPSS-X**, and mainframe and electronic communication systems.

Presentations/ Publications

1993 Chaired a roundtable on Girls Education at the AWID forum, WA, D.C., October.

*1-Master's thesis (1989) Higher Education and Graduate Unemployment dilemma in Mali (UIUC , mimeo)

*2-Girls' Access to Education: A comparing results in Mali and Tunisia from 1960 to 1987 (addressing inequity) (UIUC , mimeo)

*Used by MUCIA and Mali USAID Mission on recommendation by Dr. Fred S. Coombs, Associate Dean and Policy Analysis professor in UIUC College of Education

Co-researcher and field director of: Inside classrooms in Guinea: Girls' experiences , a World Bank Study, July 1994.

Professional Activities

1995 Member of AERA

1989-1991 Member of the WID executive Board at the University of Illinois

1991-95 Member of the Association of Women in International Development (AWID)

Languages spoken

Fluently speak, read and write English, French, Bambara/Malinké, Fulani/Peuhl, and Songhoi/Sonrai.

2 Region__________ 3 Name of village or town______________ REGN/LOCTN

The following is for general information about you. Please write in when there are lines or check in the appropriate box when boxes are provided.

4 You are:

Father [ ]1 Mother [ ]2 SEX

5 Marital Status: MARISTAT

Single [ ] 1
Married [ ] 2
Divorced [ ] 3
Separated [ ] 4
Widowed [ ] 5

6 Ethnic group: ETHGRP

Bambara [ ] 1
Bella [ ] 2
Bobo [ ] 3
Bozo/Somono [ ] 4
Dogon [ ] 5
Kassonké [ ] 6
Mossi [ ] 7
Peuhl [ ] 8
Sénoufo [ ] 9
Soninké/Sarakolé [ ] 10
Sonrai [ ] 11
Malinké [ ] 12
Maure/Touareg/Targui [ ] 13
Tamashek [ ] 14
Wolof [ ] 15
Other [ ] 16
(If other, Please specify) ____________

7 Which of the folowing would describe you? SOCSTAT

Very rich [ ]1
Rich [ ]2
Comfprtable [ ]3
Poor [ ]4
Very poor [ ]5

8 Your religion is: RELIG

Islam [ ]1
Christianity [ ]2
Animism [ ]3
Other [ ]4
(If other, Please specify) _____________

9 How old are you? ___________________________ AGE

10 What is the highest level you've reached in school? EDUC

____

11 What is your occupation? OCCUP

Farmer	[ ]1
Housewife	[ ]2
Teacher	[ ]3
Administrator	[ ]4
Merchant/Trader	[ ]5
Businessman	[ ]6
Police officer	[ ]7
Military	[ ]8
Other	[ ]9

(If other, Please specify) ______________________

11a If you are answer to the above was "[ ] 5", which categoy do you fall in?

Import-export merchant	[ ]1
Wholesale agent	[ ]2
Retailer	[ ]3
Running a small store in the corner	[ ]4
Other	[ ]5

(If other, Please specify) ______________________

11b Your job is in the: JOBSECT

Public sector	[ ]1
Private Sector	[ ]2

11c Are you self-employed

Yes [ ]1 No [ ]2

12 PROPEST

a You live in a: (circle or check one, or just answer)

A villa	[ ]1	A cement house but not nilla	[ ]2
A mud-house	[ ]3	A hut	[ ]4

Other [ ] 5 (Please specify) __________________

b It is rent Personal

c Is there a frige in your house? Yes [ ]1 No [ ]2

d Is there an icemaker in your house? Yes [ ]1 No [ ]2

e How many wives/cowives do you have? ______________________

f How many cars do you have?______________________________

g How much do you pay for your kids schooling per year?____________CFA

h How many house-maids do you have?_________________________

i In your house you have: a tap a well neither (circle one)

Your total monthly income (including:salary, houses/farms or other being rented to people, salary from any additional job(s), is in the range of (in CFA):

TOTINC

20-30000	[ ]1
31-40000	[ ]2
41-50000	[ ]3
51-60000	[ ]4
61-70000	[ ]5
71-80000	[ ]6
81-90000	[ ]7
91-100000	[ ]8
Other	[ ]9

(If other, Please specify) ______________________

13 Please fill out the table below telling us how many of your children have gone to school, how far each has gone, whether they finished or are still in school and whether they are boys or girls:

KIDSCHLG

	Sex	Age	Own child	Relative's child	level	Status
Child 1						
Child 2						
Child 3						
Child 4						
Child 5						
Child 6						
Child 7						
Child 8						
Child 9						
Child 10						
Child 11						
Child 12						
Child 13						
Child 14						
Child 15						
Child 16						
Child 17						
Child 18						
Child 19						
Child 20						

Codes: For sex put M for male; F for Female. For Age, specify the person's age and for the level reached: 0=never schooled, 1 through 12=first grade through high school,

13 one year beyond high school,
14 two years beyond high school
15 three years beyond high school

16 bachelor's degree
17 master's degree
18 doctorate level
19=Expelled
20=finished studying
21=Continues school
22= Other
If other than all the above please specify what it is)

____

14 Do you have daughters who dropped out of school? DRPT

yes [ ]1 No [ ]2

14a If yes, how many were due to pregnancy?___________ PREGDRPS

15 How many daughters under age 15 do you have that are not going to school?______________________ NONSCYG

Please take a few more minutes to respond the following questions according to your situation. Next to each of the following statements, please check the one you Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD) with or Have no opinion (NO).

		SA 1	A 2	D 3	SD 4	NO 5
16	I usually hide m y daughters or marry them off early to keep them out of school	[ ]	[ ]	[ ]	[ ]	[ ]STRAT
17	In my community very few parents send their daughters to school because we do not believe in the importance of school for girls	[ ]	[ ]	[ ]	[ ]	[ ]COMINFL
18	Our daughters help us in supporting the household by doing some work or income-generating activity, which prevent them from studying	[ ]	[ ]	[ ]	[ ]	[ ]FRGONE
19	If girls stay in school, they can work later and earn money but that income takes too long to come	[ ]	[ ]	[ ]	[ ]	[ ]PRTEXPCT
20	Our daughter(s) quit school early because there are many things the schools require that parents cannot pay for due to poverty	[ ]	[ ]	[ ]	[ ]	[ ]SES
21	If we could borrow money and pay back slowly, I would send my daughter to school and encourage her study	[ ]	[ ]	[ ]	[ ]	[ ]BORO
22	If there were affordable grinding					

	mills here my daughter would not need to pound grain and she would be able to go to school and have more time to study	[ ]	[ ]	[ ]	[ ]	[ ]HELP
23	These days I think parents lack the sufficient authority and control to make their daughters attend school and work hard	[ ]	[ ]	[ ]	[ ]	[ ]PRTLRESP
24	Personally, I would rather have my daughters married because my religion and culture make me believe marriage protects girls better than a paid job or knowledge acquired at school	[ ]	[ ]	[ ]	[ ]	[ ] CULTINF

		SA 1	A 2	D 3	SD 4	NO 5
25	Schools do not teach girls anything valuable for her future life as wifes and a mothers	[ ]	[ ]	[ ]	[ ]	[ ]SCHQUAL
26	I believe school undermines my daughter's belief in God and respect for her culture and traditions	[ ]	[ ]	[ ]	[ ]	[ ]RELIGNF
27	If she goes to school, I would rather have my daughter taught by a female instructor than a male instructor	[ ]	[ ]	[ ]	[ ]	[ ]TCHRSEX
28	I don't want my daughter in school because girls are abused by their male teachers and by their male classmates, exposing them to pregnancy	[ ]	[ ]	[ ]	[ ]	[SAFTY
29	The distance separating us from school makes it very hard for my daughter while we have no other means	[ ]	[ ]	[ ]	[ ]	[ ]DISTCE

Please share with us your views regarding government provision for your children's education, information to you about school, and incentives procedure to help you and your children.

		SA 1	A 2	D 3	SD 4	NO 5
30	I know that a few years in school can help a girl live longer and healthier	[ ]	[ ]	[ ]	[ ]	[ ]INFODIS
30a	I know that a few years of schooling can help a girl raise healthier children who will live	[ ]	[ ]	[ ]	[ ]	[ ]INFODIS

30b	I know that a few years of schooling bring more benefits than just a salary she'll make by working (in an office for instance)	[ ]	[ ]	[ ]	[ ]	[ ]INFODIS
31	If the government enforces the compulsory education law, (by prison threats, for instance) many would feel compelled to let their daughters go to school	[ ]	[ ]	[ ]	[ ]	[ ]SANCTNS
32	Where I live, I see nothing the government is doing to encourage people to send their daughters to school	[ ]	[ ]	[ ]	[ ]	[ ]GOVHELP

33 What would your recommendations be to the government in order for more girls to go to and continue school?

APPENDIX B

TEACHERS' SURVEY INSTRUMENT

2 Region__________ 3 School________________ REGN SCHL

4 You are:

Male [ ]1 Female [ ]2 SEX

5 Marital Status: MARISTAT

Single [ ] 1
Married [ ] 2
Divorced [ ] 3
Separated [ ] 4
Widowed [ ] 5

6 Ethnic group: ETHGRP

Bambara [ ] 1
Bella [ ] 2
Bobo [ ] 3
Bozo/Somono [ ] 4
Dogon [ ] 5
Kassonké [ ] 6
Mossi [ ] 7
Peuhl [ ] 8
Sénoufo [ ] 9
Soninké/Sarakolé [ ] 10
Sonrai [ ] 11
Malinké [ ] 12
Maure/Touareg [ ] 13
Touareg [ ] 14
Wolof [ ] 15
Other [ ] 16
(If other, Please specify) ______________

7 Your religion is: RELIG

Islam [ ]1
Christianity [ ]2
Animism [ ]3
Other [ ]4
(If other, Please specify) ______________

8 What is your educational level ? EDUC

____

9 Occupation

Teacher [ ]1
Administrator [ ]2 Specify______________
Other [ ]3
(If other, Please specify) ______________ OCCUP

10 Since when have you started this job? EXPRCE

Since 19___

11 How long have you been at this school?
_____years (and/or) ___months POSITN

Based on your experience, personal observation, and school records, would you please express what your views are regarding the following. Next to each of the following statements, please check the one you Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD) with or have no opinion (NO).

		SA	A	D	SD	NO
		1	2	3	4	5
12	Through their performance and their attitude at school, I believe boys are more interested in school than girls	☐	☐	☐	☐ MOTIV	☐
13	Moslem girls tend to do poorly in school compared to girls from other religions	☐	☐	☐	☐ RELIGINF	☐
14	Personally, I always expect girls to fail and end up dropping out	☐	☐	☐	☐ TCHRBIAS	☐
15	Girls who have educated mothers tend to do better in school than girls from families where no parent has had schooling	☐	☐	☐	☐ MOED	☐
16	Many parents think school is just a waste of time for their daughters and they discourage them of fail to encourage them	☐	☐	☐	☐ PRTLBEL	☐
17	I believe the school curriculum plays some role in girls' failure because it is very male-centered	☐	☐	☐	☐ SCLCURR	☐
18	Some girls, especially in rural areas, do poorly for they think they ought to get married rather than stay in school	☐	☐	☐	☐ SCULTINF	☐
19	At school, girls are generally more comfortable with female teachers	☐	☐	☐	☐ TCHRSEX	☐
20	I recognize that some teachers beat and insult girls, which frustrate and discourage them	☐	☐	☐	☐ TCHRATIT	☐

21	Personally, I'd rather deal with boys than girls because when a male teacher gives special attention to a female student it is misinterpreted in class and in society	[ ]	[ ]	[ ]	[ ]	[ ]	COMMINF
22	Girls from poor families are less likely to succeed at school because they work too much for their families and have less or no time to study	[ ]	[ ]	[ ]	[ ]	[ ]	FRGONE
23	These days parents exercise less authority over their children even in rural Mali and they blame it on school	[ ]	[ ]	[ ]	[ ]	[ ]	PRTLRESP
24	Some parents also strive to keep their daughters out of school because they neither know, nor believe school has any benefit for girls	[ ]	[ ]	[ ]	[ ]	[ ]	INFODIS
25	Many girls drop out of school due to pregnancy and that scares parents who choose to marry them off before that happens	[ ]	[ ]	[ ]	[ ]	[ ]	PREGDROP
26	I recognize that many girls also fail in school due to the long distance that separates their home from school	[ ]	[ ]	[ ]	[ ]	[ ]	DISTCE
27	Since I started working here I have not had to implement any special policies or program to increase girls' access to this school	[ ]	[ ]	[ ]	[ ]	[ ]	ACCSPOL
28	Since I started working here I have not had to implement any specific efforts destined to increase girls' retention in this school	[ ]	[ ]	[ ]	[ ]	[ ]	RETNPOL
29	I think many parents don't feel compelled to let daughters study, and that the government can change their attitudes through rewards and or punishments of different kinds	[ ]	[ ]	[ ]	[ ]	[ ]	ENFRCMT
30	When their financial means are limited, many poor parents prefer to pay the fees for boys only, causing girls to be suspended						

and even expelled for good ☐ ☐ ☐ ☐ ☐
PRTLSES

Please answer the following questions based on the information available to you in this schoool.

31 At what age range do girls usually become pregnant in this school?
PREGLEVL

12-14 ☐1
16-18 ☐2
20-22 ☐3
It varies a lot ☐4
Other ☐5
(If other, please specify)__________________

32 At what levels do girls usually get pregnant?/
or what level has the most cases? PREGAGE

Fifth grade ☐1
Sixth grade ☐2
Seventh grade ☐3
eighth grade ☐4
Any of the above, it varies ☐5
It varies a lot ☐6
Other ☐7
(If other, please specify)__________________

33 What is the average number of pregnancies per school-year? PREGAV

____

35 What recommendations or advice would you give Malian decision makers and parents to improve girls' schooling in this country?

____

____

____

____

____

____

____

____

APPENDIX C

STUDENTS' SURVEY INSTRUMENT

Read carefully before responding and select one response in each case
unless otherwise indicated

2 Region__________ 3 Name of village or town______________ REGN/LOCTN

5 You are a:

Female [ ]1 Male [ ]2 SEX

6 Your religion is: RELIG

Islam [ ]1
Christianity [ ]2
Animism [ ]3
Other [ ]4
(If other, Please specify)_____________

7 Age ______ years old AGE

8 What is your education level? GRDE

____

Please help us describe the place and conditions of where you go/went to school by answering the following question in your own words or by checking the box that matches your situation.

9 What year did you start going to school? STARTYR
In 19_______

10 Where have you attended school the most? FRSTSCH

____

10a That school was located: DISTCEI

Close to my house [ ]1
A little far from my house [ ]2
Very far from my house [ ]3
Other [ ]4
(If other, Please specify) ___________
____

10b To go to school, there, what one means of transportation do you use most often? TRANSI

WalKing [ ]1
Taking the public transportation [ ]2
Being dropped by your family [ ]3
Being dropped by family friends [ ]4
Ging by bicycle [ ]5
Being dropped by the school bus [ ]6
Other [ ]7
(If other, Please specify) ________________

11 If your answer to 10b was [ ] 2,
how much do you pay per day?__________CFA TRSCOST

11a For how long? From 19_____up until 19_____ FEEYRS

12 How would you define the quality of roads? INFRSTR

Excellent [ ]1
Good [ ]2
Fair [ ]3
Bad [ ]4
Terrible [ ]5
Other [ ]6
(If other, Please specify) ____

12a Your school was in an area mainly:

Rural and far from the big city [ ]1
Rural but close to the big city [ ]2
Bigger than a village [ ]3
but not a big city [ ]4
Other [ ]5
(If other, Please specify) ____

13 Do you still attend school at the same location?

Yes [ ]1 No [ ]2 CURTSCH

13a If no, your current school is located: {if yes, skip to 14}

Close to my house [ ]1
A little far from my house [ ]2
Very far from my house [ ]3
Other [ ]4
(If other, Please specify) __________
---------------------------------- DISTCEII

13b To go to school now, what one means of
transportation do you use most often? TRANSII

Waling [ ]1
Taking the public transportation [ ]2
Being dropped by your family [ ]3
Being dropped by family friends [ ]4
Ging by bicycle [ ]5
Being dropped by the school bus [ ]6
Other [ ]7
(If other, Please specify) ________________

14 Your present school is located: DISTCEII

Close to my house [ ]1
A little far from my house [ ]2
Very far from my house [ ]3

Other [ ]4
(If other, Please specify) ______________________________

Please tell us about your time table and how you study by choosing an answer in each of the following statements. Just check the one depending on whether you Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD) with or (NO) no opinion on the point.

		SA 1	A 2	D 3	SD 4	DK 5	
15	Before going to school in the morning I:						FAMLABR
a	Help my mother make breakfast	[ ]	[ ]	[ ]	[ ]	[ ]	
b	All I do is eat and get readyfor school	[ ]	[ ]	[ ]	[ ]	[ ]	
16	After school, in the afternoon I:						
a	Eat and then help my mother with dinner	[ ]	[ ]	[ ]	[ ]	[ ]	
b	Eat and babysit for my mother	[ ]	[ ]	[ ]	[ ]	[ ]	
c	Eat and then do my homework for the next day	[ ]	[ ]	[ ]	[ ]	[ ]	
17	At night I:						
a	I study and then go to bed	[ ]	[ ]	[ ]	[ ]	[ ]	
b	I don't study, I go out to play with my friends	[ ]	[ ]	[ ]	[ ]	[ ]	
c	I can't study because I help with house chores	[ ]	[ ]	[ ]	[ ]	[ ]	
d	Although I work, I manage to study for the next day before sleeping	[ ]	[ ]	[ ]	[ ]	[ ]	STDTRM
e	After the chores I cannot study at night because we have no lamps here	[ ]	[ ]	[ ]	[ ]	[ ]	PRTLSES

In the following few questions, tell us what you think of school for boys and girls in your society

		SA 1	A 2	D 3	SD 4	DK 5	
18	I like school because it teaches people what they need for a good health and long life and helps them earn their living	[ ]	[ ]	[ ]	[ ]	[ ]	STBENINF
19	I think boys are more gifted than						

	girls, in general.	[ ]	[ ]	[ ]	[ ]	[ ]SEXDIFF
20	I'd rather get married than go to school	[ ]	[ ]	[ ]	[ ]	[STCLTINF
21	I think a woman who goes to school loses respect in the community	[ ]	[ ]	[ ]	[ ]	[ ]COMINFL

In the following questions, please specify whether and how each item influences your schooling by checking 1, 2, 3, 4, 5 or 6; 1 being very negatively, 5, very positively, 6 meaning it does not apply.

22 In the family environment, how does each of the following impact your studies ?

			Very negatively				Very positively
1	Helping my mother with the domestic work	1__	2___	3__	4__	5__	6___
2	The babysitting I do for my mother	1__	2___	3__	4__	5__	6___
3	The fact that noone coaches me at home	1__	2___	3__	4__	5__	6___
4	My religion which requires that girls remain at home	1__	2___	3__	4__	5__	6___
5	The fact that I do not believe in the importance of school for girls	1__	2___	3__	4__	5__	6___
6	The fact that very few girls go to school in mycommunity	1__	2___	3__	4__	5__	6___
7	The fact that my parents think school teachings go against our traditions	1__	2___	3__	4__	5__	6___
8	The fact that my parents are too poor to pay for the things required by school	1__	2___	3__	4__	5__	6___
9	My personal determination to study	1__	2___	3__	4__	5__	6___
10	The fact that my parents push and encourage me to do well	1__	2___	3__	4__	5__	6___
11	The fact that all of my older brothers and sisters succeeded at school	1__	2___	3__	4__	5__	6___
12	Other	1__	2___	3__	4__	5__	6___

(if other, please specify)____

23 In the school environment, what, among the following, impacts your schooling and to what extent?

			Very negatively				Very positively
1	The fact that I do not see many girls at school	1__	2___	3__	4__	5__	6___
2	The fact that boys bother me too much	1__	2___	3__	4__	5__	6___
3	The fact that school is too far from						

	girls, in general.	[ ]	[ ]	[ ]	[ ]	[ ]SEXDIFF
20	I'd rather get married than go to school	[ ]	[ ]	[ ]	[ ]	[STCLTINF
21	I think a woman who goes to school loses respect in the community	[ ]	[ ]	[ ]	[ ]	[ ]COMINFL

In the following questions, please specify whether and how each item influences your schooling by checking 1, 2, 3, 4, 5 or 6; 1 being very negatively, 5, very positively, 6 meaning it does not apply.

22 In the family environment, how does each of the following impact your studies ?

			Very negatively			Very positively	
1	Helping my mother with the domestic work	1__	2___	3__	4__	5__	6___
2	The babysitting I do for my mother	1__	2___	3__	4__	5__	6___
3	The fact that noone coaches me at home	1__	2___	3__	4__	5__	6___
4	My religion which requires that girls remain at home	1__	2___	3__	4__	5__	6___
5	The fact that I do not believe in the importance of school for girls	1__	2___	3__	4__	5__	6___
6	The fact that very few girls go to school in mycommunity	1__	2___	3__	4__	5__	6___
7	The fact that my parents think school teachings go against our traditions	1__	2___	3__	4__	5__	6___
8	The fact that my parents are too poor to pay for the things required by school	1__	2___	3__	4__	5__	6___
9	My personal determination to study	1__	2___	3__	4__	5__	6___
10	The fact that my parents push and encourage me to do well	1__	2___	3__	4__	5__	6___
11	The fact that all of my older brothers and sisters succeeded at school	1__	2___	3__	4__	5__	6___
12	Other	1__	2___	3__	4__	5__	6___

(if other, please specify)____

23 In the school environment, what, among the following, impacts your schooling and to what extent?

			Very negatively			Very positively	
1	The fact that I do not see many girls at school	1__	2___	3__	4__	5__	6___
2	The fact that boys bother me too much	1__	2___	3__	4__	5__	6___
3	The fact that school is too far from						

my home 1__ 2___ 3__ 4__ 5__ 6___
DISTPROB

4 The fact that my friends got pregnant 1__ 2___ 3__ 4__ 5__ 6___
5 Having a man as an instructor 1__ 2___ 3__ 4__ 5__ 6___
TCHREX

6 Knowing that male teachers abuse big girls 1__ 2___ 3__ 4__ 5__ 6___
TCHRABUS

7 The assistance I receive from my male peers 1__ 2___ 3__ 4__ 5__ 6___
8 The fact that I can find food at school 1__ 2___ 3__ 4__ 5__ 6___
9 My personal determination to study 1__ 2___ 3__ 4__ 5__ 6___
10 Other 1__ 2___ 3__ 4__ 5__ 6___
(if other, please specify)____

24 What discourages you about school among the following?

Lack of latrines at school [ ] 1
Lack of latrines at school for girls [ ] 2
Absence of books [ ] 3
Absence of tables and chairs in class [ ] 4
Other [ ] 5
(if other, please specify)________________________________

*25 How many children do you plan to have?____________ FUTKIDS

*26 Do you think it will be hard for you to be a mother and worker at the same time?
WKEXPT [

Not at all [ ]1
A little hard [ ]2
Very hard [ ]3
I do not think so [ ]4
Other [ ]5
If other, please specify________________________________

*27 What aspect of education is the most interesting to you? TYPOFED
Gaining access to interesting professions [ ]1
Acquiring financial independence [ ]2
Abillity to have fewer children [ ]3
Greater openmindedness [ ]4
Multiple skills besides salary [ ]5
Other [ ]6
If other, please specify________________________________

*28 What kind of schooling (training) do you think girls ought to receive? (in what fields, and for what reasons)? FEMEDUC

----

29 What is your preferred future career? FUTCAR

Housewife	[ ] 1
Midwife/nurse	[ ] 2
Teacher	[ ] 3
economist	[ ] 4
Doctor	[ ] 5
Secretary	[ ] 6
Dancer in a bar/a disco	[ ] 7
Other	[ ]8

(If other, please specify) ________________________________

30 Why is this your choice?____________________________________

APPENDIX D

DECISION MAKERS' SURVEY INSTRUMENT

Marital Status:

Single	[ ] 1
Married	[ ] 2
Divorced	[ ] 3
Separated	[ ] 4
Widowed	[ ] 5

Ethnic group:

Bambara	[ ] 1
Bella/Tamashek	[ ] 2
Bobo	[ ] 3
Bozo/Somono	[ ] 4
Dogon	[ ] 5
Kassonke	[ ] 6
Maure	[ ] 7
Mossi	[ ] 8
Peuhl	[ ] 9
Senoufo	[ ] 10
Soninke/Sarakole	[ ] 11
Sonrai	[ ] 12
Other	[ ] 13

(If other, Please specify) ______________________________

The category the respondent falls in

Decision maker

a Officials	[ ] 1
b Parents	[ ] 2
c Religious groups	[ ] 3
d Women representatives	[ ] 4

Implementers

e Teachers	[ ] 1
f School administrators	[ ] 2

Beneficiaries

g.Current students	[ ] 1
h Graduates/dropouts	[ ] 2

Editor: ____ Date: ____________

1 Do you think the first leaders here were committed to promoting female schooling in this country? If so, do think they deployed enough efforts to succeedfor instance efforts to convince parents about the usefulness of female education?

2 Do you believe the Malian society and public are now better prepared to support female schooling policies?

3 What do you think were the socioeconomic, cultural and religious conditions which hampered a greater girls' participation in school in Mali since 1962?

4 Do you think the same kind of conditions are again likely to play agains the current efforts to promote greater female school participation?

5 Do you know if there are clearly set objectives to be reached as far as female schooling is concerned? If so, what are they?

6 Are there reliable resources available to reach those objectives? If so, what are they?

----

7 Do you think that people here have reached a level where they started establishing a cause/effect theory between female education and the development of this country?

----

8 Who are the implementing agents and how responsible will they be for the success of the implementation process?

----

9 What are the guidelines and sanctions set for the implementation process and how will they be enforced?

----

10 What do you think could be the consequencesintended as well as unintendedof the current policies regarding girls' schooling and how will you address them?

----

11 This country now has an independent press which seem to be interested in social problems among others. Do you think they will play a positive role in the efforts to increase girls' school participation and change parents' attitude?

----

12 If yes, could you elaborate on how that might happen?

13 Do you feel that the Malian populations are more open to female schooling today than they were thirty years ago? Why?

14 If the present government is seriously committed to promoting greater female school participation in Mali, how far do you feel it will go to change parents' attitude while at the same time guarranteeing them the protection of the values they do not want their children to lose? What will the government do with those who do not comply?

15 How will the current efforts be evaluated in order to guarrantee them a certain continuity and success?

16 In a clear way, could you describe what your longterm palns are regarding girls' schooling in Mali? Knowing that some of the problems experienced today resulted from the 1962 reform and/or the way it was implemented, what is being done to prevent the same kind of problems from occurring again?

17 It is often said that the curriculum in countries like Mali is irrelevant or biased, will the current school curriculum undergo any chages in order to make it more practical and more beneficial?

18 If you were to evaluate the first two republics on their performance on issues of girls' schooling, what would your impressions be?

19 Final comments /recommandations?

VITA

Aminata M. Soumaré, Ph.D.

Career Objective

Interested in Teaching and research related to policy studies/making, policy analysis, comparative education, educational development and equity, also issues of female education and gender roles in international development.

Education

1994	Ph. D. University of Illinois. Major: Educational Policy Analysis. Minor: Gender Roles in International Development -Thesis Director: Walter W. McMahon, Economics/Education.
1989	Master's Degree, University of Illinois at Champaign-Urbana, Educational Policy Studies
1984	B.A., Ecole Normale Supérieure (Mali)
1977	Lycée Notre Dame du Niger, Baccalauréat Malien, Deuxième partie (Mali)
1976	Lycée Notre Dame du Niger, Baccalauréat Malien, Première partie (Mali)
1974	D. E. F. (diplôme d'études fondamentales) Second Cycle fondamental de Goundam

Teaching Experience

1989-1992	**Teaching assistant** at the Center for African Studies, University of Illinois.
1984-1986	10-12 grade **English instructor** in Mali: first at the Vocational School: Centre de Formation Professionnelle (CFP), then at Lycée Régional de Ségou (general education)
1982-1983	Summer **Language instructor** for **Peace Corps**: (Bambara and French to new volunteers in Bamako, Mali)

Research experience

1993-1994	Research Assistant: thesis format chekcer for the college of education at the University of Illinois:checking format agreement and sometimes editing as well.
1992-1993	Four month-Ph.D. thesis data collection in Mali, supported by **the Academy for Educational Development/USAID**. Topic: factors that affect girls' access to and retention in school in developing countries/focus on Mali.
Sum. 1993	Research assistant, Educational Policy Studies, University of Illinois.
1990	Spring research assistant. Responsibility: randomly selecting subjects for nation-wide study, sending questionnaires out, receiving them back, and analyzing and interpreting data, for Dr. Robert E. Stake, Univ. of Illinois.
1989-1991	Research assistant at the Center for Instructional Research and Curriculum Evaluation with Dr. Robert E. Stake, (CIRCE), Univ. of Illinois.

1988	Designed and conducted thesis data collection in Mali, June-August for Master's thesis. Topic: Higher Education and Graduate Unemployment in Mali

Consulting-Commissioned reports

1994	Four month field director for a World Bank study in Guinea: participated in designing and implementing training, collected data, supervised research assistants, and coordinated other activities, then wrote part of report.
1993	Commissioned report for Creative Associates International-USAID/AED on Factors the Affect Girls' Access to and Retention in School in Mali.
1992	Interviewed by VOA on a comparison of education for Blacks in the United Stated versus Education in African countries.
1991	Interviewed by VOA on female schooling in Mali and in developing countries in general
1990	Consultant, Member of MUCIA team which assessed feasibility of a projected University in Mali for the African Development Bank. Responsibilities included: selecting subjects, gathering and analyzing information, writing a report, and making recommendations to the Ministry of Education.

Computer Skills and Experience

Likes computers and has strong familiarity with, and mastery of various word and data Processing softwares on both IBM and Macintosh (Word Perfect, M S Word; SAS (Statistical Analysis System), LOTUS , Microsoft Excel, SPSS-X, and mainframe and electronic communication systems.

Presentations/ Publications

1993	Chaired a roundtable on Girls Education at the AWID forum, WA, D.C., October. *1-Master's thesis (1989) Higher Education and Graduate Unemployment dilemma in Mali (UIUC , mimeo) *2-Girls' Access to Education: A comparing results in Mali and Tunisia from 1960 to 1987 (addressing inequity) (UIUC , mimeo) *Used by MUCIA and Mali USAID Mission on recommendation by Dr. Fred S. Coombs, Associate Dean and Policy Analysis professor in UIUC College of Education Co-researcher and field director of: Inside classrooms in Guinea: Girls' experiences , a World Bank Study, July 1994.

Professional Activities

1995	Member of AERA
1989-1991	Member of the WID executive Board at the University of Illinois

1991-95 Member of the Association of Women in International Development (AWID)

Languages spoken

Fluently speak, read and write English, French, Bambara/Malinké, Fulani/Peuhl, and Songhoi/Sonrai.

HECKMAN
BINDERY INC.
DEC 95
Bound -To -Please® N. MANCHESTER,
INDIANA 46962

UNIVERSITY OF ILLINOIS-URBANA
3 0112 005498602